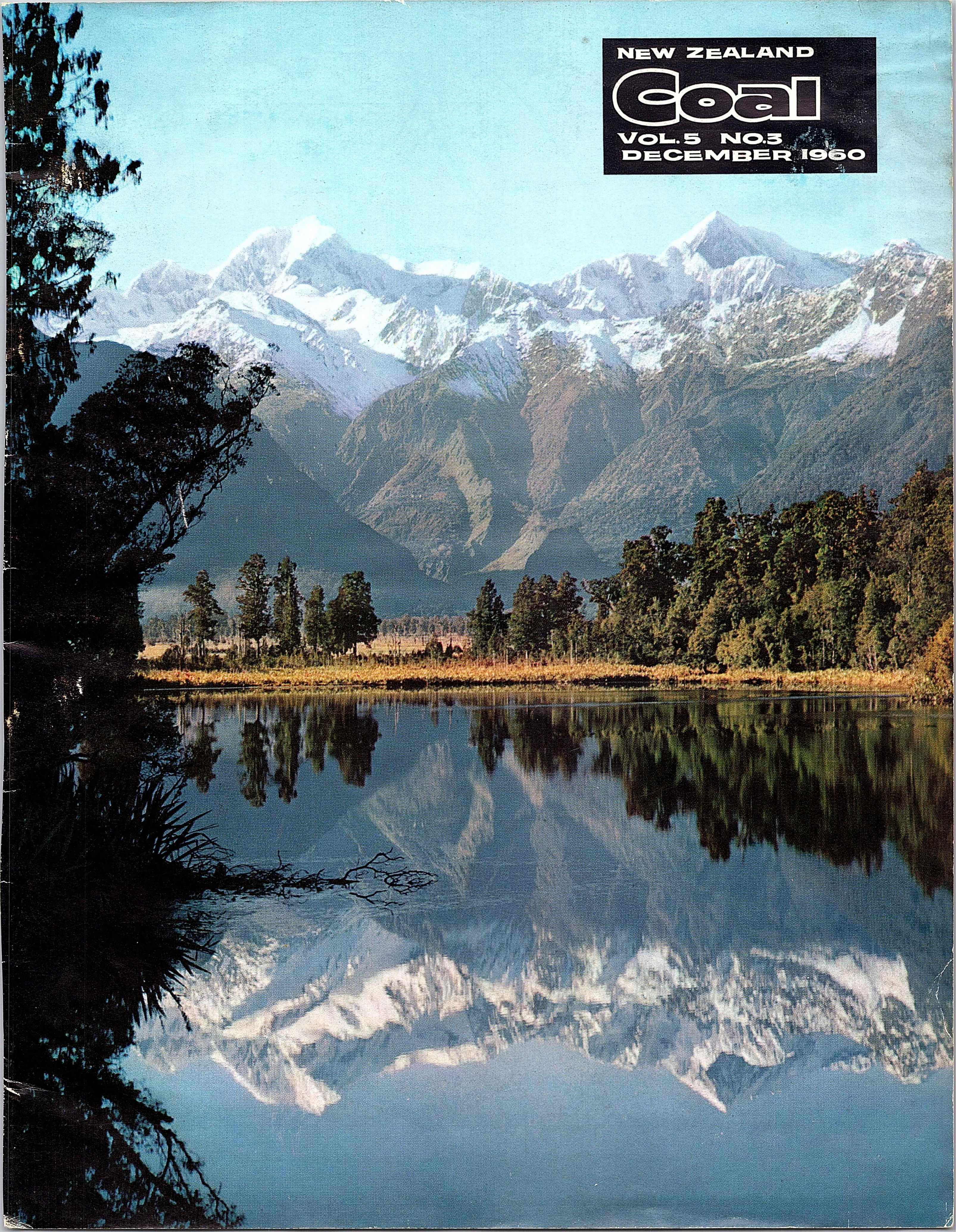
NEW ZEALAND
Coal
VOL. 5 NO. 3
DECEMBER 1960



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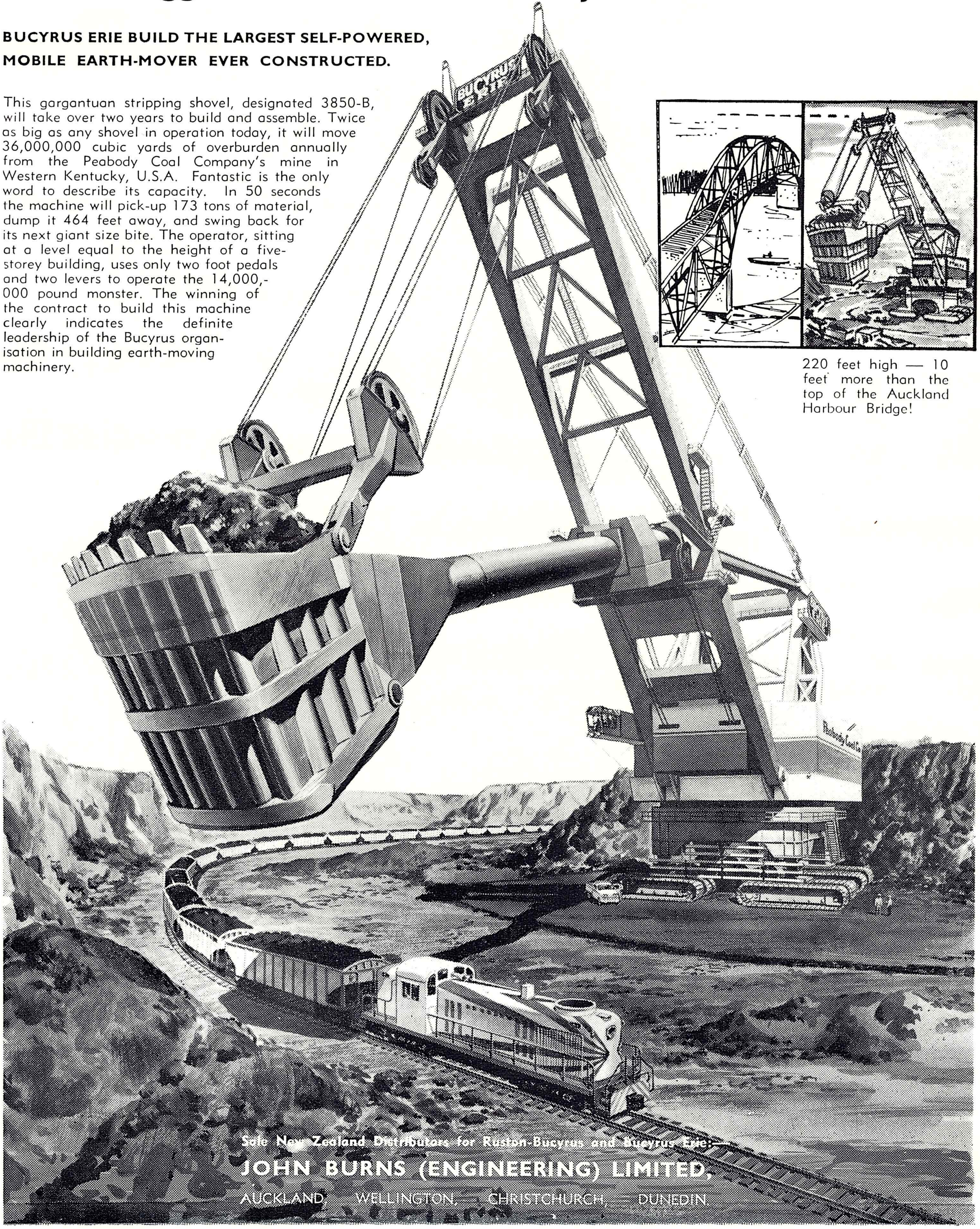

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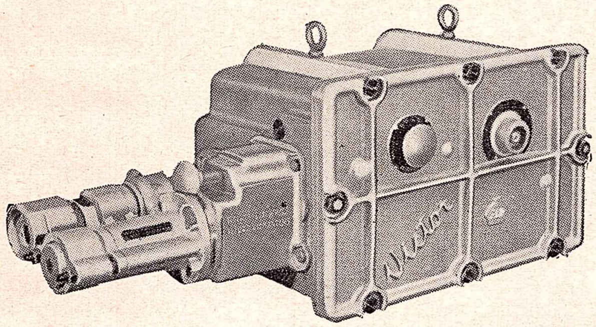

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NEW ZEALAND
Coal

OFFICIAL JOURNAL OF THE N.Z. COAL MINING
DISTRICTS' WELFARE & RESEARCH COUNCIL

Registered at the C.P.O., Auckland, for
transmission through the post as a magazine

PUBLISHING AND ADVERTISING:
C.P.O. BOX 2990, AUCKLAND
EDITORIAL:
P.O. BOX 5042, WELLINGTON

PUBLISHED QUARTERLY

VOL. 5, No. 3 :: :: :: :: DECEMBER 1960

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OUR COVER PICTURE

Have you ever stopped to think just how magnificent New Zealand really is?

A picture like our cover picture needs no words to tell of the beauty of nature in this country.

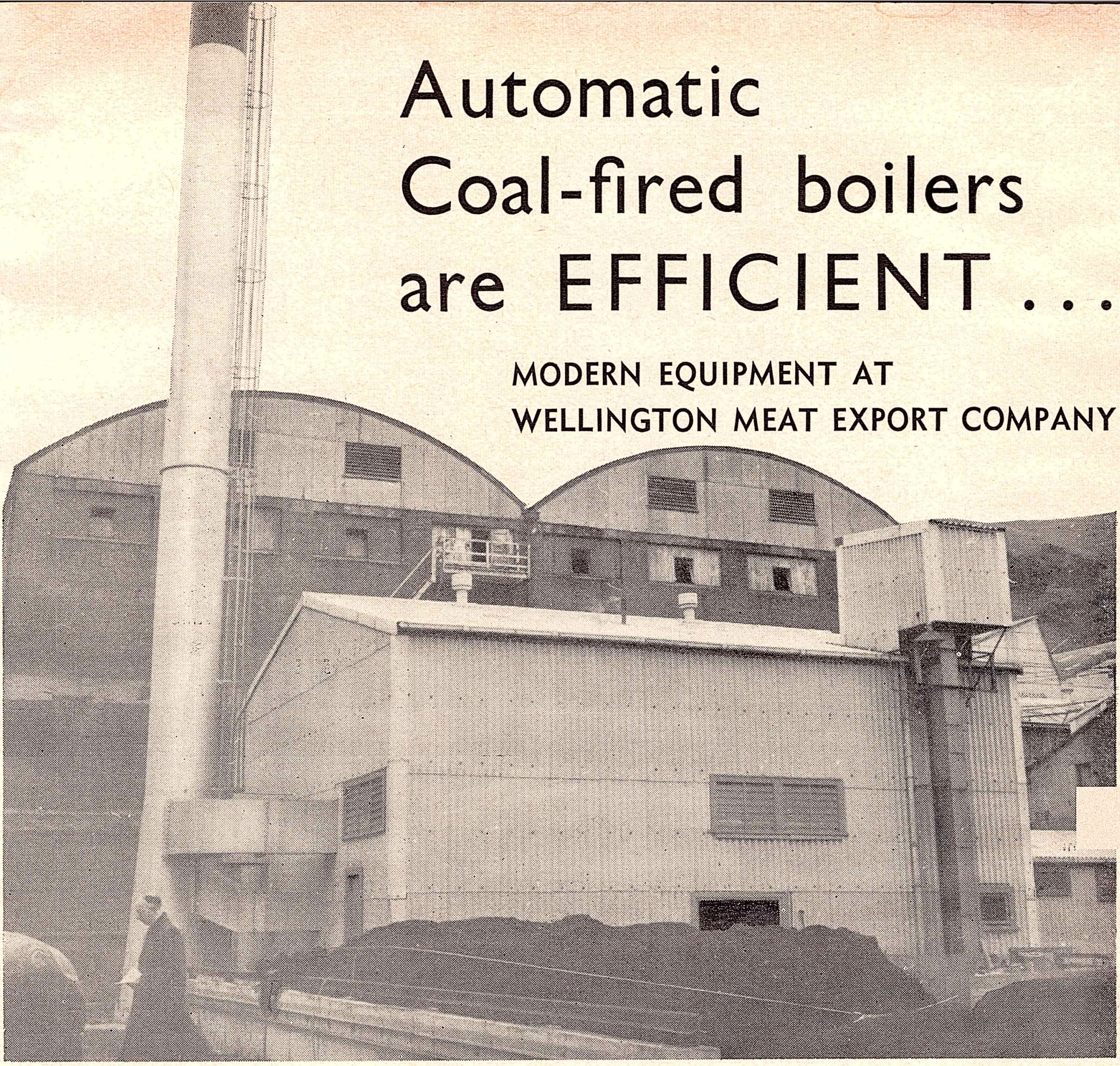
"Coal" is happy to feature this glorious view of Lake Matheson reflecting the monarchs of the Southern Alps, Mt Cook and Mt Tasman, as its Christmas cover.

The picture is by courtesy of Government Tourist and Publicity Department.

Printed by Cox & Dawes Ltd., 26 St. Paul Street, Auckland, C.1.

Automatic Coal-fired boilers are EFFICIENT . . .

MODERN EQUIPMENT AT WELLINGTON MEAT EXPORT COMPANY



Coal fired boilers are not only efficient; they are also most economical, clean and reliable. This is borne out by the results from the automatic coal fired boilers operating at the meat processing plant of the Wellington Meat Export Company Ltd.

Last September, "Coal" paid a visit to this company's works at Ngauranga to see these boilers in action, and we were very impressed with what we saw.

The chief engineer, Mr Wagstaff, directed us to the boiler house where an efficient young engineer, Mr Ron Keown, took over and went out of his way to ensure that we saw everything. He was really proud of that boiler plant.

The start of the whole operation was outside, where a large concrete bunker holds 250 tons of coal. Across this, an automatic Pikrose dragline works backwards and forwards, scraping up the coal and throwing it into a screw feeder. This in turn fills a continuous chain of buckets which lift the coal up to the top of the boiler house and drop it on to the weighing scale. As the scale points to 1 cwt. it automatically trips, dropping the coal into another screw feeder that deposits it on the moving continuous chain grating of the boiler itself.

The coal is here regulated to whatever depth is needed according to the amount of steam required. It could be as thin as 2 in. or even up to 10 in. thick. When we saw it, the depth was 5 in., giving a good average production of steam. During the season the boilers use from 20 to 25 tons of coal a day.

Powerful boilers

The boilers, manufactured by Marshall & Anderson Ltd., Motherwell, Scotland, each produce 15,000lb of steam an hour at a pressure of 160 p.s.i.g. The temperature of the steam reaches 370 degrees F. There is a balanced draught from a forced draught fan for each grate, and one induced draught fan per boiler. Two Weir reciprocating feed pumps give efficient water feed.

As one of the boilers was dismantled at the time, we were able to have a good look inside and see exactly how it worked. Mr Keown crawled inside to point out the various important parts and show us exactly how the utmost efficiency is gained from automatic scientific firing.

The firing chamber itself is about 10 feet long and 4 feet in diameter. A firebrick wall comes halfway up the chamber, dividing the actual firing from the combustion gas chamber. The gases pass through the tubes three times, dropping from 1500 degrees F. to 350 degrees in the process, and thus transferring a maximum of heat to the boiler water.

The ash is collected and dropped into a hopper that is emptied into a truck and carted away twice a day.

From the bins to the fire, the whole operation is automatic. The only manual work is in setting a small lever to adjust the thickness of coal on the moving grate bed.

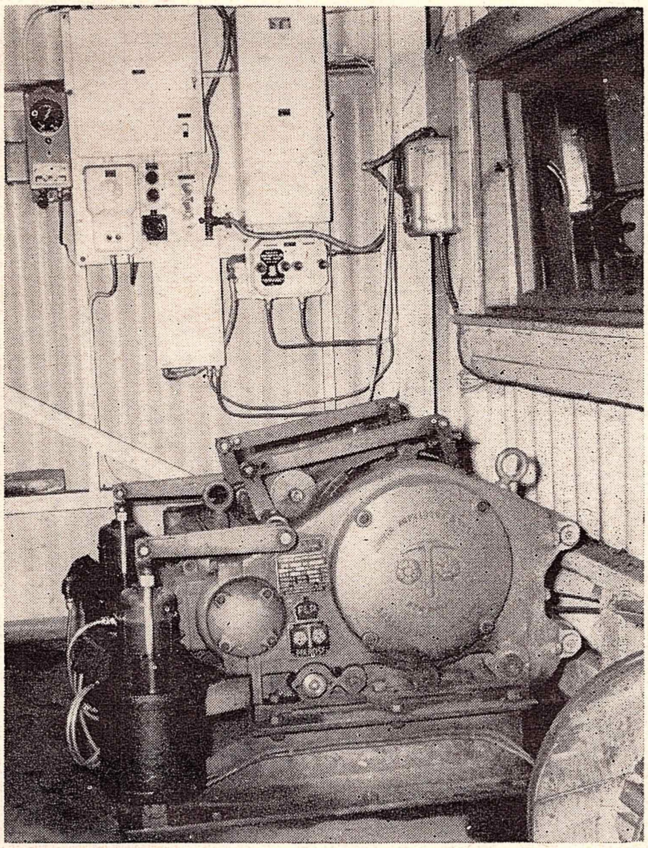
Automatically recorded

The mechanical heart of this modern coal-burning equipment is a panel with numerous dials and moving graphs on its face. This gives a constant and recorded picture of what is happening all the time—the amount of firing, the amount of steam being used, the pressures, the ratios of firing to steam produced.

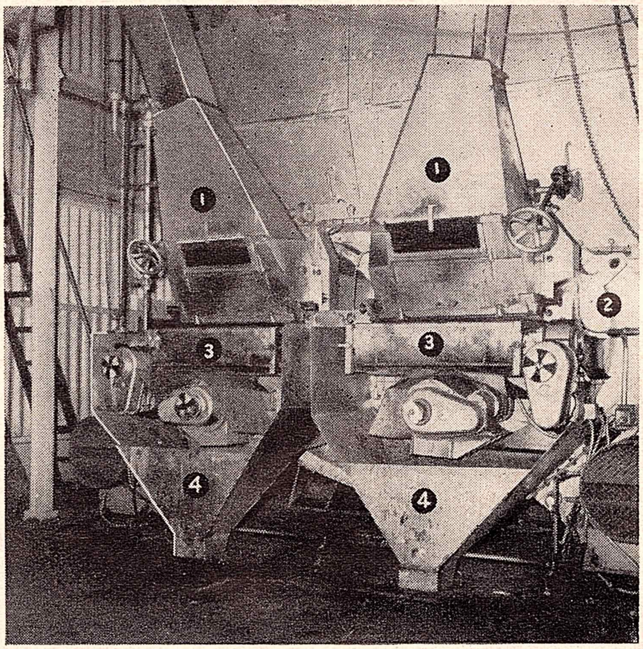
The many dials were a bit bewildering to us, but to the engineer they told a story of exactly what was happening all around the works. He opened out one graph. A series of multicoloured lines undulated across its surface. "Here you are," he said. "You see where that line drops at about 11 o'clock? Well, that's when the men had morning tea and some of the steam was shut off."

It is certainly some engineering achievement that can automatically tell you when the men are having morning tea.

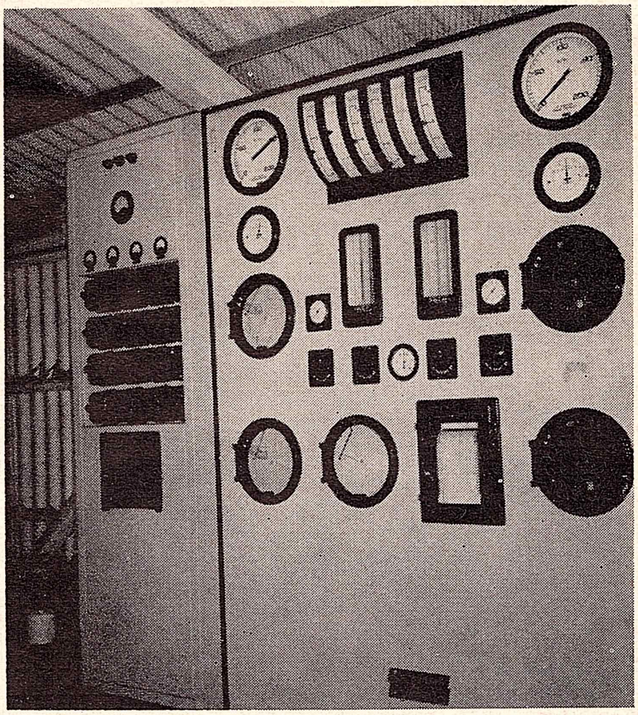
We looked at our watch. It was getting late. "What about YOUR afternoon tea?" we enquired.



This machine operates the Pikrose dragline feeder.



One boiler in operation showing (1) overhead coal feed; (2) lever to adjust depth of coal on grate; (3) the moving grate is behind this panel; (4) this bin collects the ash and deposits it through the floor into hoppers below.



The mechanical heart of the boilers. These dials tell the full story, and record it.

"That just went past," said Mr Keown, and, as he saw our look of concern, "But, don't worry, I don't mind in the least. It's a pleasure to show you around."

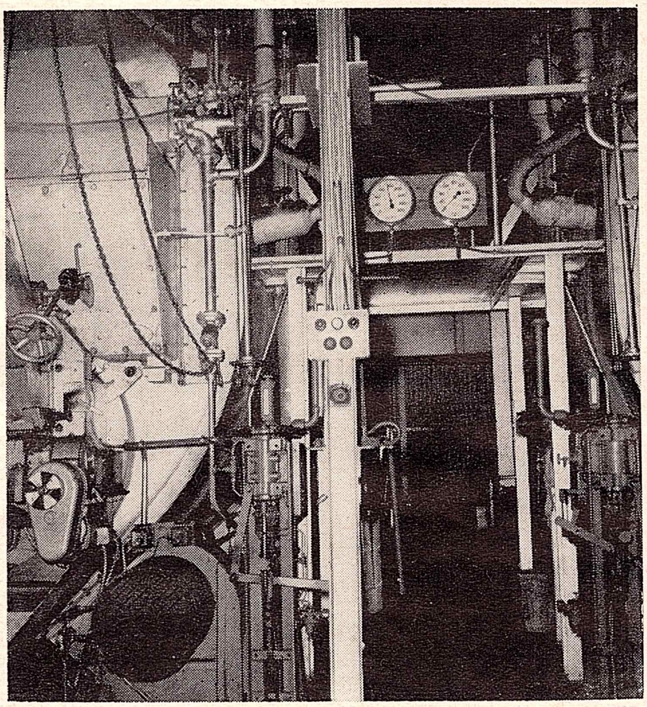
The firing at this plant begins about 6 a.m. It is necessary that all the freezing workers' clothing be thoroughly dry before they put it on, so the engineers' work begins early. They finish about 6 p.m. but in season can go on up till 10 o'clock at night before they close down.

Stored heat overnight helps produce the new head of steam each morning.

On the way out we inspected the "Hi-lo" water alarm that is the safety precaution against dangerous water levels, as the name implies, both high and low.

No fume trouble

"Have any trouble from the neighbours about smoke?" we enquired. Mr Keown smiled. "None at all. Look at this." He showed us the Sirocco grit extractor that removes all grit and foreign matter from the fumes. A thin trickle of very fine ash fell into a barrel that is emptied twice a day.



Cleanliness is a feature of the boiler house.

We went out into the cool atmosphere and looked up. From the top of the tall smoke stack a barely discernible wisp of smoke was quickly dissipated into the atmosphere.

A housewife could hang out a full line of washing right under that chimney without any fear of smoke contamination.

It is easy to understand that anyone having fume or grit trouble with a coal fired boiler has the remedy in his own hands.

We thanked Mr Keown for going to so much trouble to explain so exactly the full working of the plant.

"Come again," he said, with friendly courtesy. "I'll be happy to show you around at any time"—and he meant it.

WEAR YOUR HELMETS

The wearing of helmets will be compulsory next year. Co-operate now and always wear your helmets. They are provided for your own safety.

Christmas Message from Hon. F. Hackett

As the year 1960 draws to a close, I should like to take this opportunity of wishing all "Coal" readers, and through them everyone connected with the coal industry, a happy Christmas and every success in the New Year.

The future of the industry has been the subject of very full consideration by Government, consultant experts, and various committees. New markets are being vigorously sought and methods of making coal more attractive to domestic users are being instituted.

We go forward with determination to ensure that this great national asset maintains its rightful place in the country's economy.

Good wishes to you all.

FRED HACKETT.

SOLID FUEL BOOKLET

So popular has the Solid Fuel Booklet proved with architects, builders, factory managers and home renovators, that 10,000 more copies will be printed.

This attractively designed booklet answers the questions of heating and firing from the home to the factory, showing the various types of heaters and explaining their advantages.

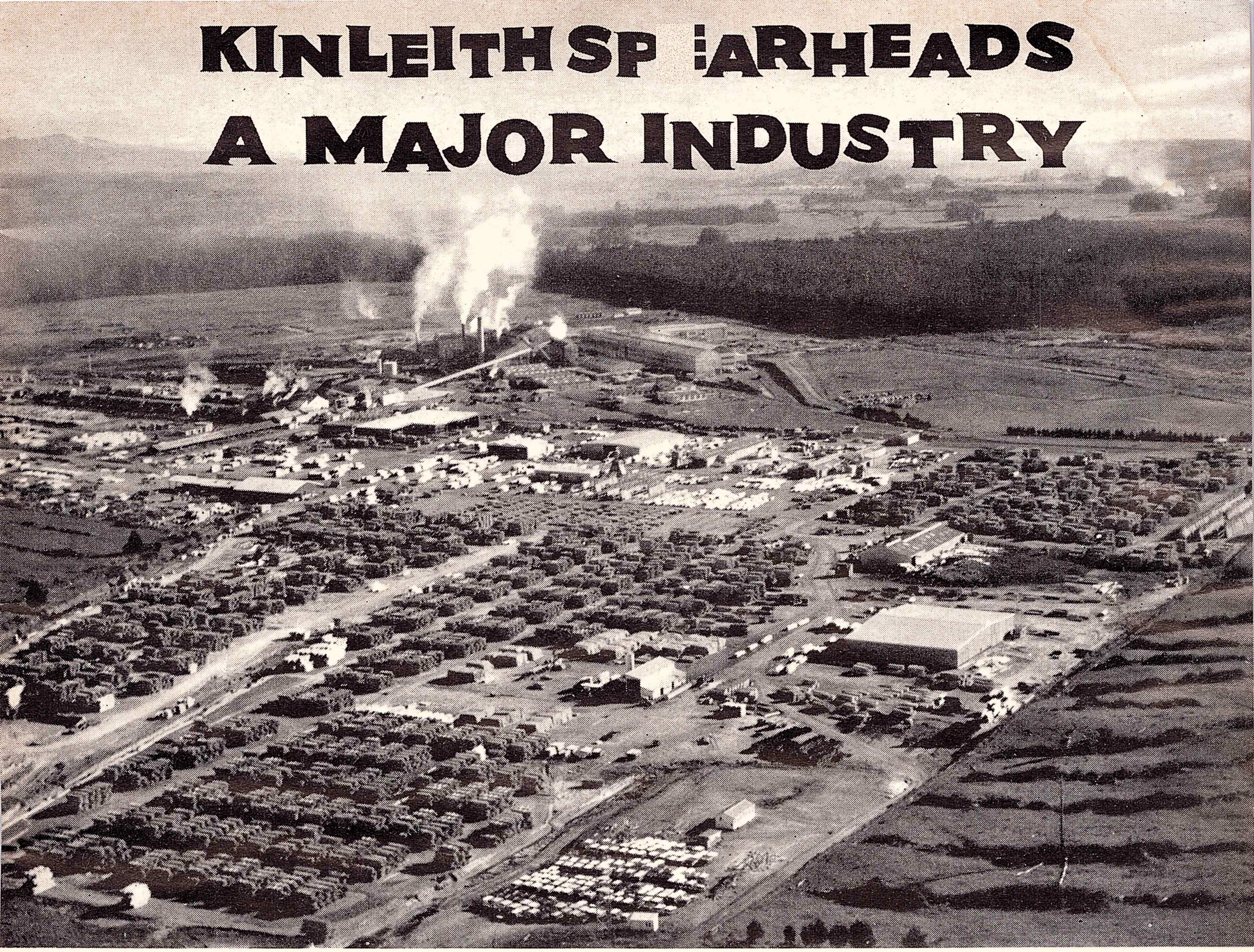
It covers the whole field from open fireplaces and coal ranges to the most modern space heaters and industrial boilers. It also shows how to store domestic fuel and gives designs for coal bins.

Readers wanting a copy of this valuable booklet should write early to

Coal Information Centre,
P.O. Box 6342,
Te Aro,
WELLINGTON.

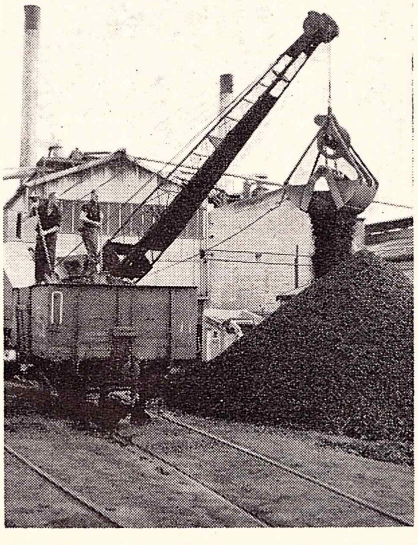
Copies will be sent free of charge as soon as the new edition is published.

KINLEITH SPEARHEADS A MAJOR INDUSTRY



Set in the frame of exotic pine forests, these are the Kinleith pulp, paper and timber mills.

About 140 miles south-south-east from Auckland lies the thriving township of Tokoroa. In 1948 Tokoroa had a population of 140; in 1960, 8,000. This mushroom growth was due to the establishment of the mills of N.Z. Forest Products Ltd. at Kinleith—only four miles away.



Unloading coal at the Pinex wallboard plant, Penrose, Auckland.

When the Kinleith industries were officially opened by the Prime Minister in February, 1954, the event established this country as one of the major pulp and paper making nations of the world.

New Zealand's exotic pine plantations are a national asset, and forest utilisation now ranks as the fourth most important industry in New Zealand.

The world is dependent upon wood, and our forests are inexhaustible if properly cared for and replaced as used.

The location of Kinleith was selected for several reasons — water supply, access to forests, proximity to transport; and it now occupies a cleared site of 150 acres. It is a great industrial centre set amid the great pine forests.

The sawmills at Kinleith have a capacity of 42 million board feet annually. Logs are transported to the mills by a fleet of 55 logging trucks over a comparatively short distance, because the trees practically grow on the doorstep of the mills.

One of the big industries at Kinleith is the kraft pulping process. Small fine chips are reduced to pulp until the mixture looks like thick porridge. This is dried and cut into sheets 31 inches square.

Some 70,000 tons of pulp are produced annually, and of this over 30,000 tons are exported.

Kraft paper is produced by the mile, and this is used for multiwall paper bags, fibre containers, corrugated containers and shopping reels.

What statistics show

Statistics show that 80 million board feet of sawn timber are produced annually (this includes Pinedale and Maraetai), 70,000 tons of chemical pulp, 39,000 tons of kraft paper, 86 million square feet of wallboard, 19 million multiwall paper bags, 50 million square feet of veneer and 600,000 tons of log utilisation. Various types of wallboard, hardboard, pegboard, acoustic tiles, mouldings, insulating board and other materials are produced by Forest Products Limited.

To produce this output, the great coal-burning furnaces at Kinleith use 25,500 tons of coal annually, and at Penrose 12,000 tons — a total of 37,000 tons each year.

In this way coal is linked with one of the greatest industries of our time.

Fire precautions

Such a colossal undertaking as Kinleith must of necessity have a number of additional services.

During the fire season — October to April — extra precautions are taken to prevent forest fires. The radio room at Kinleith is the nerve centre of a control system embracing six lookout towers, a number of patrol vehicles and a patrol boat on the Maraetai hydro-electric dam lake. In addition, during danger periods a chartered aircraft makes routine flights over the pine forest plantations, reporting regularly to the radio room by radio-telephone.

The Kinleith Fire Brigade, a New Zealand championship winner, is on a 24-hour daily alert. They take no chances at Kinleith.

There is a large first aid clinic with waiting room, treatment room, visiting and doctor's room, a two-bed recovery ward, store room, office, sluice room and bed-sitting room for night attendant. Alongside is the ambulance port and stretcher entrance.

Many amenities

Three miles of standard railway sidings link up with the national railway network, 370 wheeled vehicles and 64 power units are serviced by the Kinleith garage, and an airstrip allows direct air service between Kinleith and Auckland.

A large community centre about a mile from the mills is provided for the single men. There is a recreation hall, billiards room, reading room, post office and cafeteria facilities. Alongside is a playground for football and tennis, and a swimming pool has been planned.

Altogether Kinleith as an industrial centre in the heart of the pine forests, is one of the show places of New Zealand, and one of which we can well be proud.

* * *

NEWS FROM AUSTRALIA

Rescue Telephone

The Australian Coal Association (Research) Ltd. has developed (in conjunction with A.W.A. Ltd.) a transistor rescue telephone, designed for use with Proto apparatus in underground rescue team control.

This provides greater safety for the rescue team members, as a controller, working with the mine management at the surface, can follow step by step the progress of the team underground, and pass on to them necessary instructions. It also ensures greater protection for the rescuers, as a second team can be standing by for emergencies.

This rescue telephone proved itself in a South Australian coalfield, when it was used in a real emergency and considerably speeded up rescue proceedings.

Stoker Firing

Australian fuel engineers have been testing and advising on the operation of underfeed stokers which have been fitted to a downdraught intermittent brick kiln in Sydney. The 115,000 brick capacity kiln was converted from hand firing to stoker firing by fitting 12 Joshua Bigwood Style 5 Underfeed Stokers in place of the 24 hand-fed fireholes.

During the initial kiln burns, the engineers recorded CO^2 values, checked draughts across the kiln, observed temperature distribution, advised on firing techniques and demonstrated a means of obtaining a reducing atmosphere condition in the kiln at the later firing stage. As a result the temperature distribution across the kiln, and the bricks produced, were similar to those obtained when the kiln was hand fired.

The advantage of stoker firing is that improved efficiency and negligible smoke emission, except during the reducing period, are obtained. Operator attention is less than for hand firing and to date stoker maintenance seems negligible.

A comprehensive report covering all aspects of the work is being prepared, and this will be circulated throughout the clay industry in Australia to inform them of the work being done in this field.

New Plant Not Always Necessary

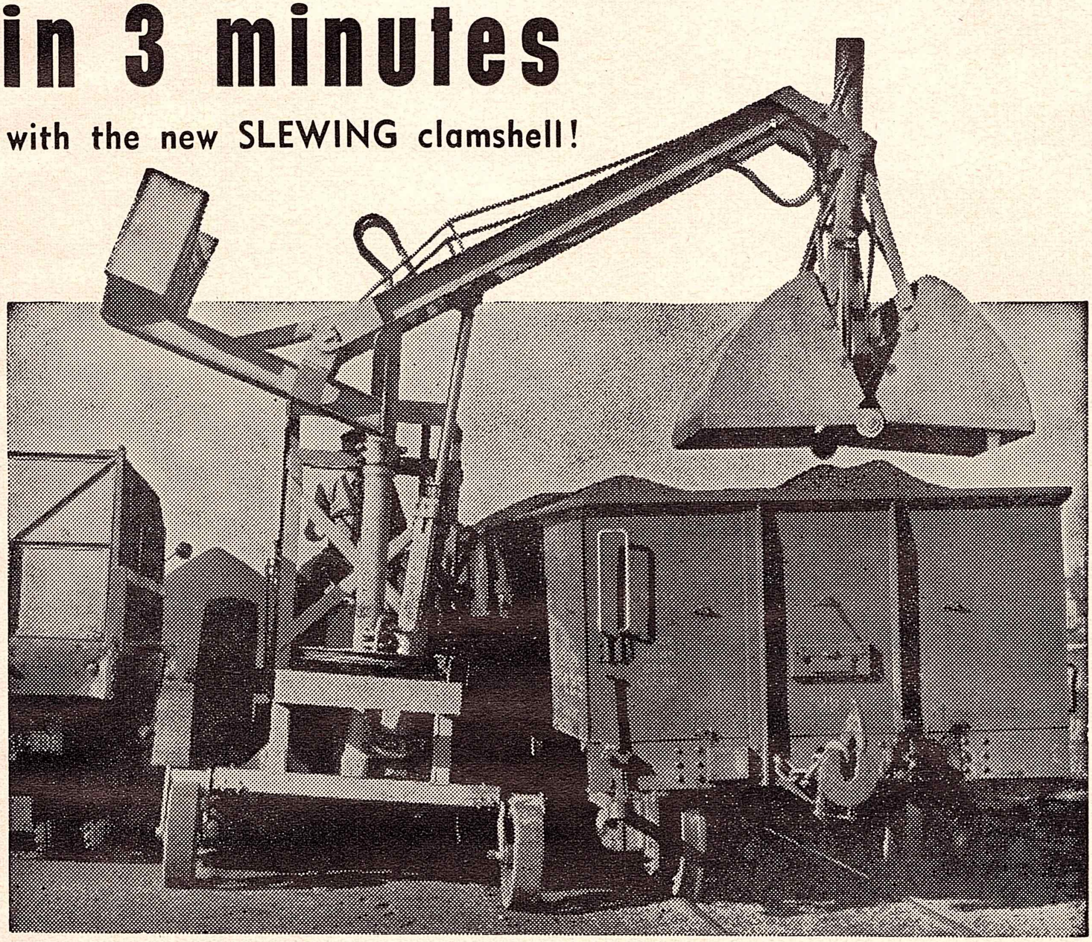
A fuel engineer visited a North Queensland meat works to help improve steam output of the boiler station. The plant comprised several chain grate stoker-fired water-tube boilers which were barely holding steam load at peak conditions. Investigation showed that actual boiler capacity was ample, but efficiency was extremely low. Visible signs of air leakage into the boilers and low pressure drops through the boilers, indicating faulty baffles, were obvious causes of inefficiency. Besides this, observation of the fire showed that combustion was extremely poor, due largely to the strongly caking properties of the coal.

Previously the coal supply had been altered, resulting in an increase in the fines contents, which aggravated the coke formation on the grate. With a view to reducing the problem, it was suggested that a well conditioned nutty coal with minimum fines be burnt and that less air be passed through the coal during the initial heating period so as to increase oxidisation of the coal.

The findings at this works showed the management that the existing boiler plant was capable of handling increased load requirements, given the proper attention. This meant that the anticipated need for new plant proved, on expert advice, to be unnecessary.

handle up to 4 tons of coal in 3 minutes

with the new SLEWING clamshell!

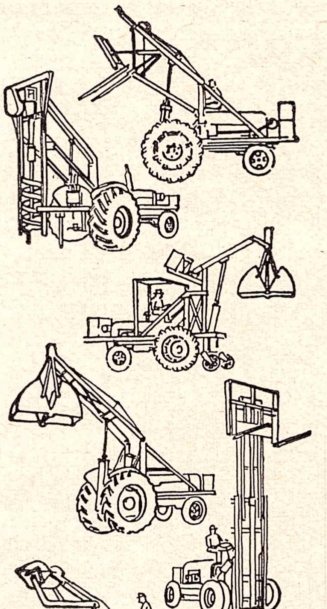


Now Pelican introduce their new Clamshell that slews round to save you turning round.

Bucket and jib slew through an arc of 220° allowing you to work alongside a railway wagon or stock pile and swivel round to deposit the load into a waiting truck.

Save time and money — investigate Pelican.

Designed for fitting to Fordson Major tractors.



Pelican
SLEWING clamshell

SEE YOUR NEAREST FORD DEALER

Manufactured for Hutchinson Motors Limited, Authorised Ford Dealers and licensed motor vehicle dealers, P.O. Box 440, Christchurch.

BYE-BYE BENHAR!

Just 48 miles south of Dunedin and five miles from Balclutha lies the settlement of Benhar. Fertile farms surround the village and a store caters for the population of 230, many of whom are employed in and about the pipe and brickworks.

For many years the Benhar coal mine supplied fuel for the brickworks, but for economic reasons this was discontinued and the plant and material withdrawn.

* * *

The mine today presents a forlorn and neglected picture. The fan-house stands apart, stark and deserted, the grass growing long and untidily about its foundations. A winch still remains in its shelter as if ready for use at the entrance to the mine. Pieces of rusting machinery lying carelessly around tell a story of past activity. A cock crowing in the distance emphasises the loneliness of the scene.

A few feet inside the entrance, the mine is closed by a solid block of concrete upon which is carved the epitaph "Benhar Mine — Sealed off 9th July 1959." Under this are the names J. K. Walls and W. R. Lundy engraved in the concrete for the benefit of posterity. Did those men ever think as they carved their names here that they would one day find recognition in the printed page?

● An outcrop of coal near the mine entrance shows how close this mineral is to the surface. Large reserves of coal still exist in the mine, but if it is ever opened again it will be as an opencast. Until then, Benhar takes its place with those many mines that have opened, flourished for a time, and then quietly faded into obscurity.

MODERNISING WITH COAL

Nothing should be left undone to stimulate the coal mining industry, and this includes the use of the most up-to-date and effective methods of producing coal. It is also imperative that manufacturing concerns should be encouraged to install the most modern equipment for its use.

—*Greymouth Evening Star, 24/8/60.*

DOCUMENTARY TAPE

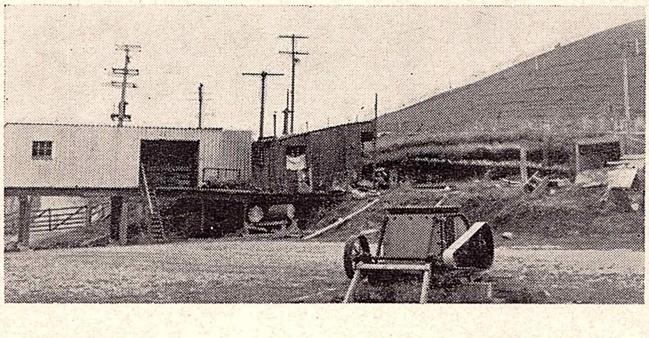
Radio 3YZ Greymouth intended to tape the closing of the Wallsend State colliery, but so interesting was the history of the mine, that a 40 minute documentary was eventually taped, recording from the early days to its official closing on February 19. This was broadcast from the local station on August 30.

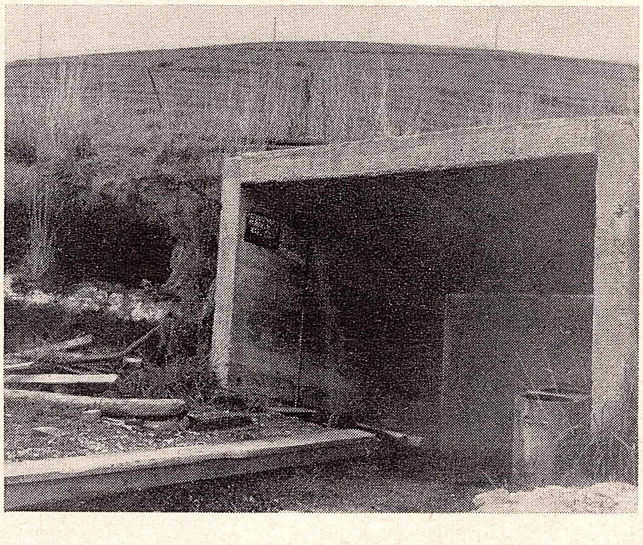
'BYE'-PRODUCTS

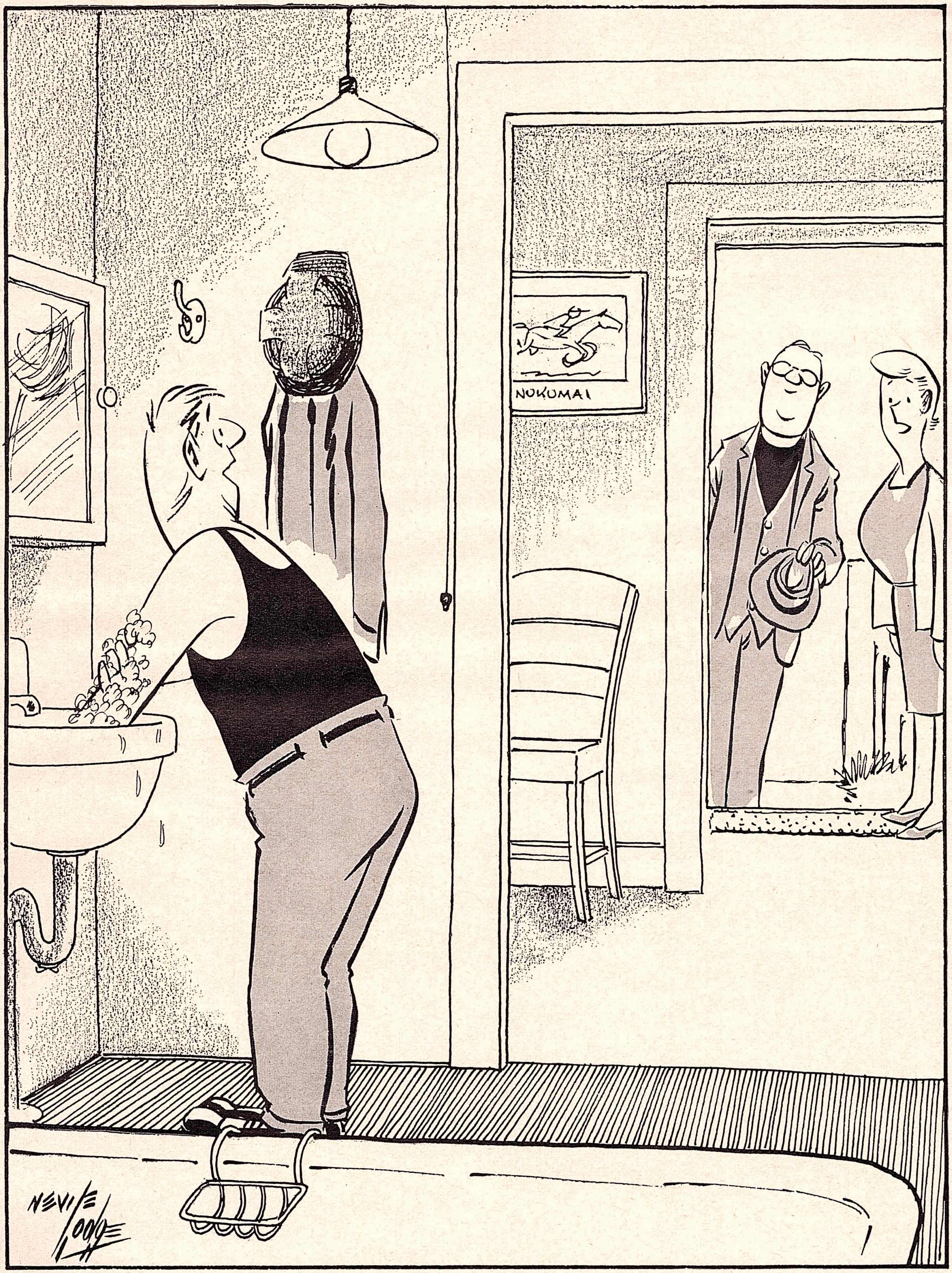
Many humorous stories circulate amongst miners, and the following, duly vouched for, has a place amongst them. A quantity of stone dust had been ordered and delivered. At the end of the shift the men remarked on its queer appearance. Investigation showed that the "stone dust" was really superphosphate, supplied in error.

If that particular section of the mine is opened up again there should be every possibility of uncovering a handsome crop of mushrooms.

(Top) Benhar settlement and brickworks. (Left) Benhar mine. The entrance to the mine is on the right. (Right) A close-up of the entrance to Benhar mine. The concrete sealing block is visible just inside.

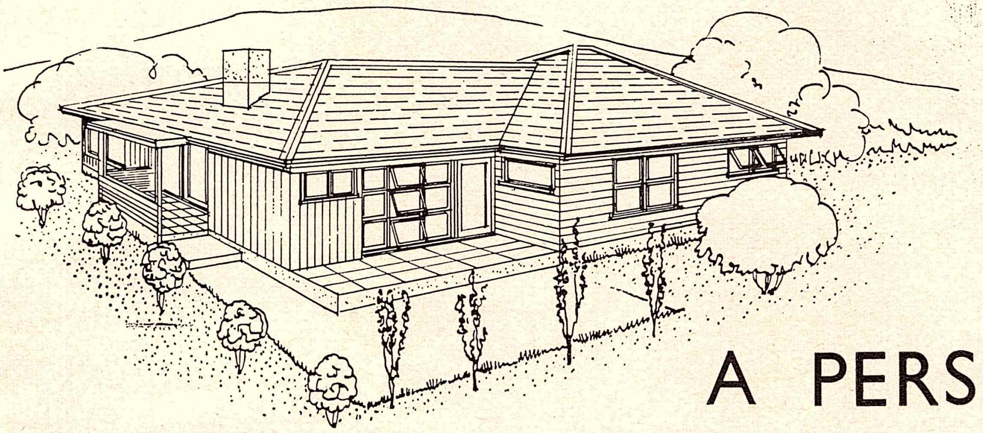






"Put your shirt on, Fred."
"On what? Has someone given you a good tip?"

The Home Architect tells you how to . . .



GIVE YOUR HOME A PERSONALITY

So much has already been written on house design that enlarging on the subject may be thought to require some apology and yet it is almost unbelievable how primitive houses can be when they could have had a great many aspects of gracious living incorporated in them . . . had they been designed to suit requirements because the first thing to do in planning a house is to know the wants of the persons who are to occupy it.

It is my intention to "take the bull by the horns" in this issue of "Coal" and discuss some of the essential factors which should govern house design even though some of you might have learned enough from previous articles to have some idea about it. And when I say "some idea" I mean it literally because there is indeed no end to learning about the manifold interpretations of living habits which ought to be reflected in a home, particularly in view of the changes which have taken place in residential design during the last decade or so.

Family interests differ

Just take two families living next to one another in the same street; in a house built on a section of equal size, facing the same view and having the same aspect of sun, and yet each family will build a different house. And rightly so. Each family is an entity in itself with different spheres of interest; one may pursue the ideals of a self-contained family to whom home life is the acme of happy living while the other could easily be of an entertaining type to whom the absence of visitors might impart loneliness. And so the grouping of rooms in one house would be out of place in the other.

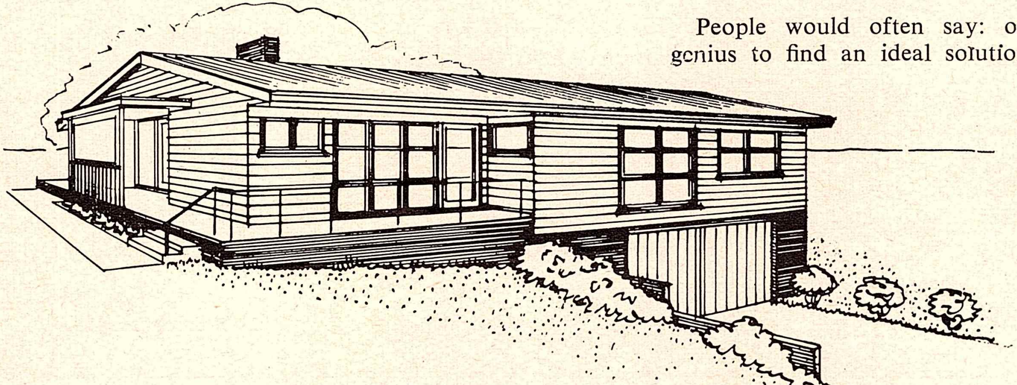
If it were possible at all, it would probably make a happier society if each family could carve out a living niche for itself within the walls of a house in which the various spaces would be better related to requirements than is the case in houses built without a "programme" — a statement of basic needs and desires — because sad as it is most of the houses built speculatively for sale have had little or no advantage of professional design.

As mentioned earlier, the first thing to do in planning a house is to know the requirements of all persons who are to live in it; the next to know is the ground and its environment. People often tell me: "But we thought that you as an architect trained in Europe would have built your house on European lines," to which there is invariably the answer: houses should fit into their environment. It would be just as great a mistake to build a Swiss chalet in the North Island as to live here on Hungarian goulash.

The next thing is to relate the interests of members of the family to the various spaces in order to create a congenial living environment.

Good houses cost less

People would often say: one would have to be a genius to find an ideal solution of this kind within the



The same house on a sloping section with garage under.

available resources of the average wage earner. Not at all: it does not cost more to build a good house than to build a bad one; in fact it costs far more to build a bad house because it does not take long before it calls for improvements. Indeed, a pleasing design can be obtained even on very modest lines provided the home builder is conscious of his potentialities and is determined to be governed by them.

Allowing for personal preferences and tastes, it is still possible to lay down certain principles which can guide a reasonable home builder.

Suppose I start off with the case of a family with three school children and they require a three bedroom house to be built on a small section (say one-eighth of an acre) which commands a good view facing the street on the south side. Let us assume an £800 yearly income of the breadwinner whose savings would be supplemented by a State Advances loan in addition to the capitalisation of the child allowance. Now, what sort of a house should such a home builder strive for?

A house to be successful must be related to its site, the natural setting, the prevailing wind, the sunny aspect, the need for privacy. If a garage is required (each third New Zealander has a vehicle of some sort) and the slope of the section justifies high foundations in some parts, it is more economical to park a car under the house than to build a detached garage or carport.

On a flat section, however, it would be a mistake to raise the floor level to seven or eight feet only to obtain garage space "under the house" which means building a two-storey house. More often than not the space adjacent to the garage becomes a dumping place for odd things which are yearly collected for disposal. In such a case it would certainly be more economical to build a house on a concrete slab (which means a saving of at least £100 — against the conventional suspended wood floor construction) and build a separate garage at the back, or even in combination with the house, provided storage space with adequate headroom under the floor is not required. If the floor of the house on a level section is raised to some two feet, such space is good for nothing. Hence a concrete floor with a suitable flooring (parquet, cork, linoleum, with wall-to-wall carpeting) is a better proposition as a draft-free floor which, contrary to popular opinion, is not "cold".

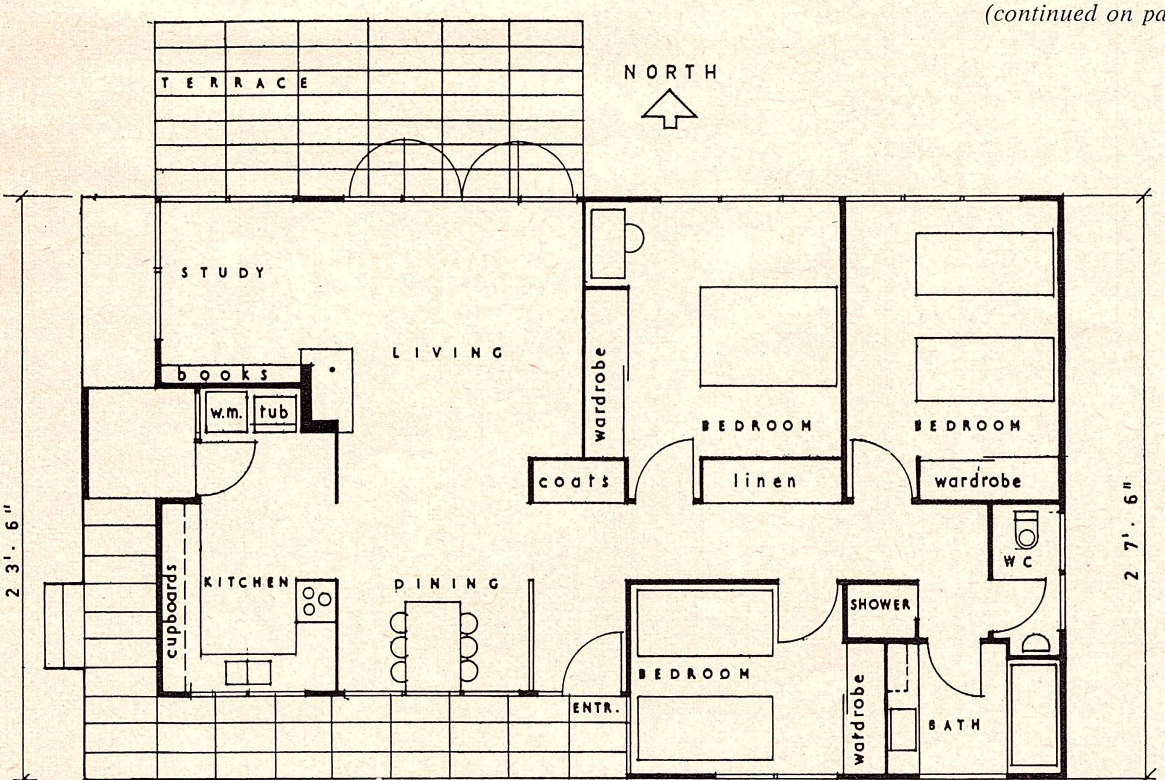
Keeping costs down

There is also the possibility of a split-level house, but unless you are used to steps, such an arrangement may in time prove inconvenient. Besides, we are here concerned with an economy house which calls for simplicity of construction to justify keen tendering.

Having reached the floor level, we are now confronted with the problem of the layout in which every square foot of area is expected to justify its existence. Walled partitions are suggested only where absolute privacy is essential (bedrooms and conveniences); elsewhere built-in walls will be used as space dividers and where possible framed-up bearing walls — which are used mainly for roof supports — will not be required in view of the light roof trusses spanning between outside walls, using less timber and less man-hours, all of which adds to economy.

Having come thus far, we now enter the space-planning stage. You will notice the word "space" being used frequently simply to divert the reader from the tightly partitioned cubicle conception.

(continued on page 12)



GIVE YOUR HOME A PERSONALITY

(continued from page 11)

We start off with the entrance from which access to the house is reached without reducing the utility value of rooms. Circulation areas (passages) should be reduced to a comfortable minimum, but care must be taken not to create unlabelled communication space in other rooms, such as crossing the living room in order to gain access to sleeping quarters and conveniences which would mean robbing Peter to pay Paul.

Another technical term — the product of twentieth century civilisation — the reader often comes across is "functional design", which is another expression for relating spaces to their needs on an economical basis. The living room, the dining area, the kitchen are areas of affinity and they need not be treated as separate rooms because by combining one with the other greater spaciousness can be obtained without actually increasing the overall area.

Before we go any further, we must remember that there is a view other than the interest of the street facing the cold side of the house which is worth capturing. When the view is competing with the sun a compromise is inevitable because while it is true that no view is worth sacrificing the sun, it would be foolish to disregard the interest inherent in a view. I have, therefore, decided to get the benefit of the sun in the living-study and that of the view from the dining-kitchen. Since all living areas are advanced on the lines of an open plan, the sun will reach the dining area and the view will be seen from the living space.

Essential privacy

As for sleeping quarters and conveniences, here absolute privacy is essential and doors leading to any of the rooms in this portion of the house should not be exposed, in particular those of the conveniences. A very ugly arrangement — which unfortunately is often seen here — is placing the W.C. opposite the front entrance door.

There is, of course, a lot more one could say about what to do and what not when finalising the layout of a house but too much of it would only confuse the average reader. It is best to start off with essentials and enlarge on them as time goes on when the fundamentals have been mastered. There will be occasion to discuss the finer points of design, their relation to available resources — which seem to be limited most of the time — and other aspects pertaining to pleasant living in economy houses.

It is among the conditions of true architecture that it mould itself to the wants and domestic habits and the public customs and the political institutions and the religious sentiment of its country and its age; that it assorts with the materials on hand, submitting to modifications as new materials present themselves; and that it avail itself, from time to time, of the various aids which mathematical and chemical science offer, for its convenience and advancement.

May I in conclusion again wish readers of "Coal" pleasant Christmas holidays and a most successful 1961 during which, I hope, New Zealanders interested in the development of our coal resources will enjoy the benefits of their full utilisation.

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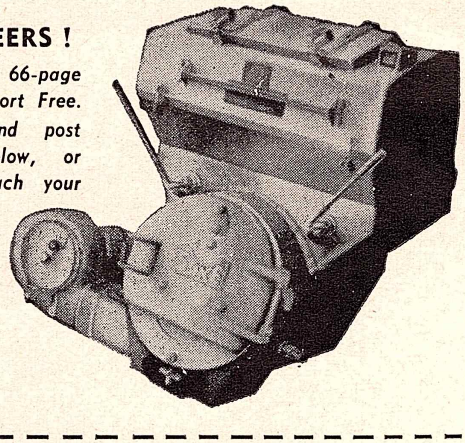

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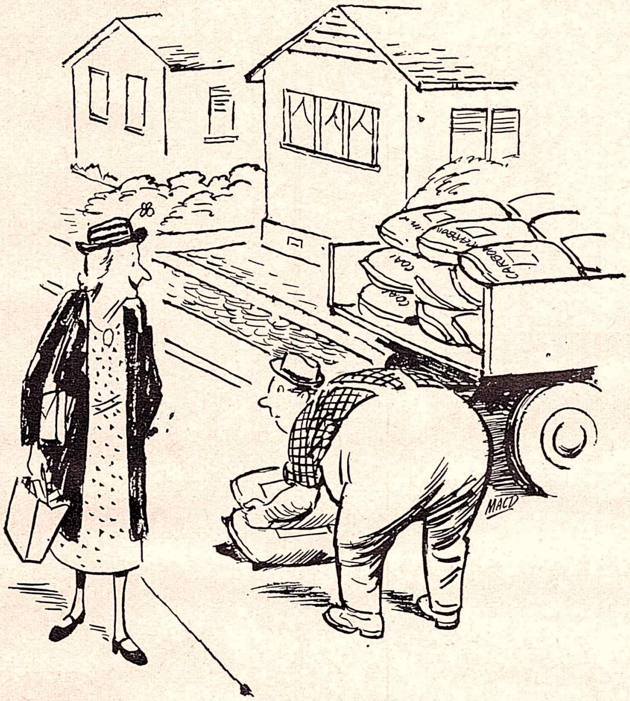


"All behind with your coal delivery?"

COAL INFORMATION CENTRE

For a long time one vital link has been missing from the solid fuel organisation — advice and servicing for new and existing coal-burning equipment.

With the establishment of the Coal Information Centre, this situation has now been remedied.

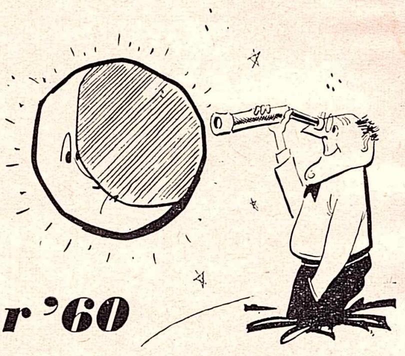
To gain the services of the most competent engineer available, the Centre has advertised in papers throughout England, Australia and New Zealand, and when this post is filled, the very best technical advice will be at the service of firms that have firing problems.

In the meantime, the Coal Information Centre is in operation with skilled technicians to advise on local difficulties, and anyone wanting advice on boiler equipment or solid fuel is invited to write to

Coal Information Centre,
P.O. Box 6342,
Wellington.

Advice and help from this organisation could increase efficiency, cut your fuel costs and save you money.

The Sky in December '60



By I. L. THOMSEN, Director of Carter Observatory, Wellington

No one ever sees the real New Moon as indicated on calendars because on those dates the moon is almost exactly between us and the sun, and therefore invisible. This December, New Moon occurs on the 18th, but two days after, the very thin crescent may be seen low near the western horizon as dusk falls. Most people think of this as the New Moon. On that date, December 20th, a fairly bright star-like object somewhat to the left of the moon, is the planet Saturn. Higher up is the most brilliant star-like object in the sky. This is the planet Venus (sometimes called the evening star), and the moon will move closer to it on December 22nd. A very pretty picture will result.

December 22nd is also the day of the solstice, when the sun is overhead on the Tropic of Capricorn at 8 a.m. This is the longest day of the year, although the difference for several days before and after amounts to only theoretical seconds.

The planet Mars is closest to the Earth on December 25th at a distance of 56,375,000 miles. It is at opposition on December 30th, which means that it will be rising in the east at about the same time as the Sun is setting in the west, and be due north on the meridian at midnight.

The last day of December is the 366th day of the leap year of 1960, and most people will be celebrating it as New Year's Eve for the incoming 1961. At the magic hour of midnight, when we can argue ourselves silly as to whether it is at that precise instant 1960 or 1961, a step outdoors will show the bright star Sirius blazing high—very high—in the heavens, almost due north.

Slightly lower in the sky and to the left is the great constellation of Orion the Mighty Hunter. The central group of this constellation forms what some people call the "iron pot". It looks just like a saucepan with a handle. Actually in the southern hemisphere we see this constellation upside-down, and the bottom of the pot is the hunter's belt, and the handle is his sword.

We can celebrate New Year in many ways, but there can surely be nothing more uplifting than spending a few minutes at its commencement in contemplating the wonders of Nature and the Universe.

A Happy New Year.

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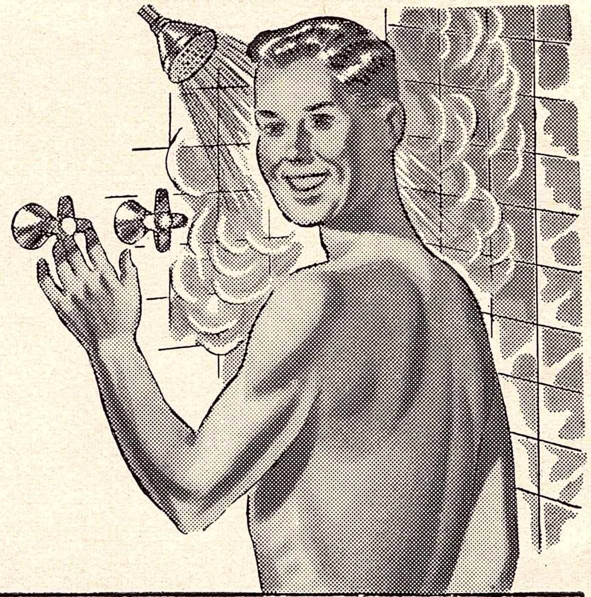

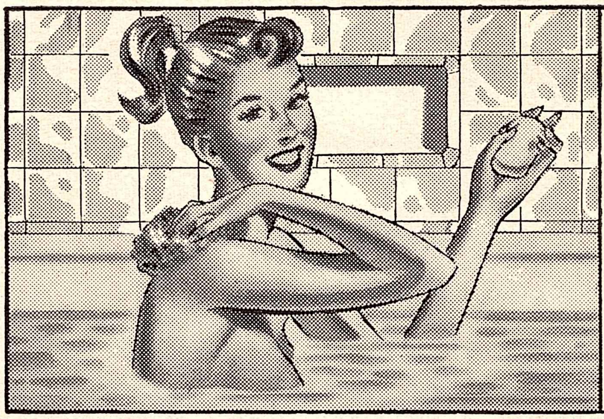

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THE GAS ASSOC. OF N.Z. INC.

2

N.Z. GAS NEWS

Coal prices

The general wage order last year resulted in increased costs for coal and freight as well as increased labour costs for manufacturing gas, and this had an adverse effect on the economics of gas undertakings. It also lessened the beneficial effect for those units which have their coal freights subsidised down to either the North or South Island average. At a meeting early in April, 1960, it was decided to stabilise the price of gas-making coals, and the Council has declared the price at April 1, 1960, to be the stable price.

Installation of new plant

It is pleasing to record that major extensions to existing plant are under way for Wellington, Dunedin, Christchurch and Gisborne gasworks. In addition to the new plant under construction at New Plymouth, the Greymouth Borough Council has completed its new works. Masterton, Blenheim and Westport are also proceeding with the installation of new plants.

Gas production figures

Production had declined steadily until the lowest point was reached in 1954, and then remained steady for two years before improving. For the year 1959, production advanced to 5,609,000,000 cu. ft., a 2.4 per cent increase over the 1958 figures and an 8.2 per cent improvement over 1954.

Mobile laboratory

Visits have been made all over New Zealand to discuss certain mobile laboratory problems with the works staff and to discuss the possibilities of production of plastic pipes suitable for gas supply with certain plastic pipe manufacturers. This month visits were or will be made to plants in Greymouth, Westport, Nelson, Blenheim and Wellington.

Gas in flats popular

Attractive "bachelor flats" in Hamilton for working women in the middle aged group are all equipped with gas. The "bachelors" thoroughly approve of this. Meals can be prepared quickly after work and the flats are quickly heated by gas fires.

Twelve of these flats have been built by the State Advances Corporation. Four are already let and applications have been called for the remaining eight which are nearing completion.

Each has a large sitting room with an alcove for a bed, a substantial kitchen and bathroom. There are small gardens and complete privacy. The "bachelors" think they (the flats) are lovely — even the rent, which is £2/3/6 a week.

Gas cookers popular

Up to the end of August this year, 28 gas cookers had been installed in new houses in Levin. There is also a promise of a further 25 cookers and water heaters for Government houses and flats. Twenty water heaters and seven gas fires have already been installed. All appliances in the Old Folk's Association Hall in Cambridge Street are also to be gas.

From down South

A further increase in gas consumption in Invercargill is expected to result from improvements to the reticulation in the city, which will allow a greater volume of gas to reach consumers. Another boost will be provided when a gas boiler is installed to heat the new city broadcasting building. The boiler will consume 2000 cu. ft. of gas an hour, the equivalent of 240 kw of electricity.

Gasification of low-grade coal in Scotland

Westfield Gas Works, Fife, which is designed for complete gasification of low-rank coal by the Lurgi process, is the first commercial plant of its type in Great Britain. It is unusual in its basic principles and has some individual items of plant of distinctive design. The Lurgi process was chosen because it was technically proven and had particular economic advantages for the area.

Most Scottish coals produce, when gasified, a moderate amount of coke and considerable quantities of breeze, neither of which offers a very good financial return. By using the Lurgi process, low-rank coal is gasified completely, and the gas, after purification, passes directly into a high-pressure grid at 250 lb. a sq. in. Suitable non-caking coal comes from an adjacent opencast mine. It is expected that the works, for which Humphreys and Glasgow Limited are the main contractors and consultants, will begin making gas before the end of the year.

In a Lurgi plant the coal is gasified in a water-jacketted vessel, the jacket generating steam which is used to cool the mechanical grate at the bottom of the vessel and then passes into the fuel bed to take part in the gasification reaction. Coal is charged through a lock at the top of the vessel and ash is drawn off through a lock at the bottom. Steam and oxygen are blown in at the bottom and gas leaves at the top at a temperature of 400 to 450 degrees Centigrade, to enter a waste heat boiler. Besides the four Lurgi gasifiers, the plant has gas purification equipment of unusual design, and will not be equipped with gasholders. All the gas — up to 30 million cu. ft. a day — will pass directly through the station meter into the high-pressure grid.

Lurgi gasification demands large quantities of high-pressure steam, to meet which requirement Babcock and Wilcox boilers are installed. They are designed to burn fine coal of high ash content, and to be fired on gas as an alternative. To deal with the fine coal, fluidised grates are fitted.

(continued on page 17)

COLLIERY RAILWAYS IN NEW ZEALAND

PART II

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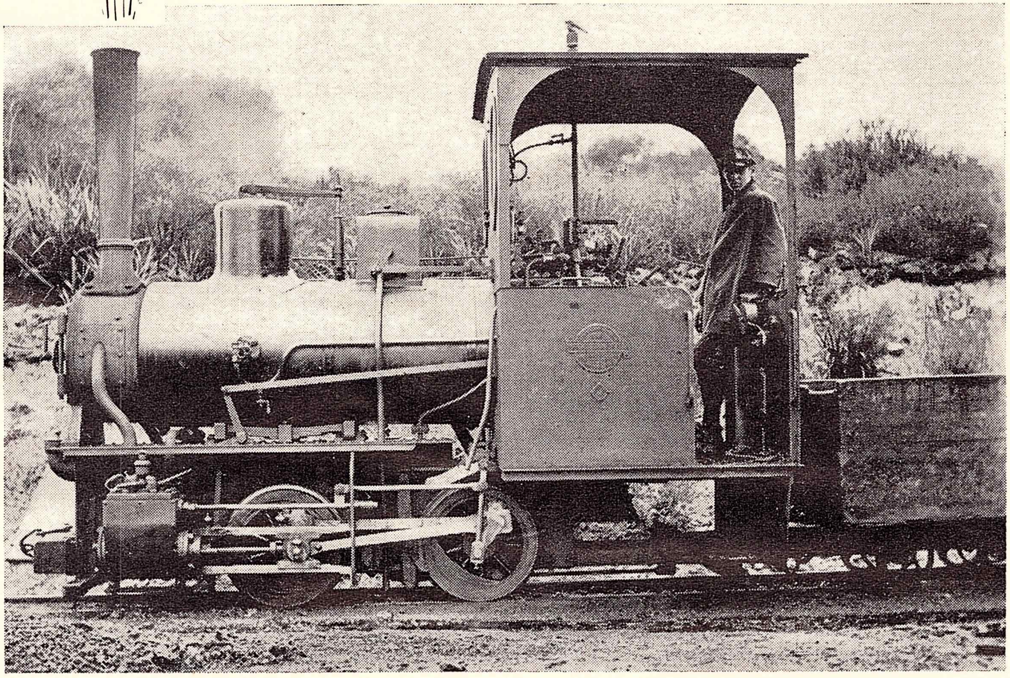

This little narrow-gauge locomotive was built by the German firm of Orenstein and Koppel for the Northern Coal Company at Waro in Northland. It was later sold to Wilson's Portland Cement Company, who used it at the works on Limestone Island and at Portland near Whangarei. Somewhere along the line it was nicknamed "Bertha". It is now being preserved by The Old Time Transport Preservation League at Matakohe in Northland, and will be entrusted to the projected New Zealand Museum of Technology and Transport for safe keeping and exhibition.

—Photo: Alexander Turnbull Library.

New Zealand's first electric railway linked mines near Stockton with a jig line, or cable tramway, leading to the New Zealand Railways' station at Ngakawau. The New Zealand Railway Locomotive Society's quarterly journal, the *New Zealand Railway Observer,* contained two interesting descriptions of this line in its issues for 1950.

Fell principle used

Built in 1908-09, the line had to negotiate gradients as steep as 1 in 20 as it dropped 1200 feet in seven miles. Electrification was the means of obtaining adequate haulage power. Special brakes acting on a centre rail on the Fell principle kept loaded trains in check as they rolled downhill. Four 20-ton electric locomotives were imported from the United States. Drawing their current from overhead wires by trolley poles similar to those used on tramcars, they were fitted with Fell brakes and used in pairs. Fell brake trucks were also used, as on a number of other West Coast colliery railways.

Collecting mine skips

The Stockton railway was laid to a gauge of 3 ft., or six inches less than the New Zealand standard. This gauge has been used on only two other lines in this country but it was formerly fairly common in the United States and Ireland. Its use at Stockton was probably decided by the gauge of the mine skips, which were collected by small electric locomotives, hauled to a central exchange siding, and handed over to the large locomotives for the run to Ngakawau. Photographs of these small locomotives show that they were typical low-built mine locomotives, giving the driver no protection against the weather. No photographs of the large locomotives are available to show what they looked like.

Ropeway replaces railway

The main line was superseded by an aerial ropeway in 1951. It had nearly been replaced by a flume in 1935 but, after several months, it was found that too much fine coal was being lost in transit and the electric engines were returned to service. Capacity and cost were the two factors which caused the line to be replaced. The railway carried 1400 tons of coal daily for 5/- a ton. In 1950 it was estimated that the ropeway could shift 2000 tons a day for 1/- a ton. The large locomotives were also nearing the end of their useful life and it would have probably been necessary to replace them. The main line of this unique and picturesque pioneer New Zealand electric railway was replaced, but the branches serving the workings and the small locomotive were retained.

Few survivors

The only surviving colliery railways in the North Island are those connecting mines between Huntly and Glen Afton with the N.Z.R. branch line between those towns. They are all short. From Renown Siding one runs to the Renown Colliery's bins. A little further on, at Rotowaro, two others diverge to serve the Allison and Rotowaro Mines. Until nine or ten years ago all three were worked by old and diminutive C and F class locomotives built in the 1870s for the N.Z.R. Then an impressive and rather more youthful locomotive arrived to do the lion's share of the work at Rotowaro. Imported during the 1920s for the Ohai Railway Board, this locomotive is believed to have been built for a railway in China which cancelled the order. Although the old-timers occasionally lend a hand, they are at last having a well-earned rest. Three ex-N.Z.R. carriages take miners from Rotowaro station to the mine. Nine or ten years ago they were veterans, built in the 1880s or 90s and fitted with raised clerestory roofs, such as have not been seen on even the most remote branch line for many years. Nowadays the mine uses three more recent but still comparatively venerable second-hand carriages.

Two or three miles further on another private railway winds up the valley from Pukemiro Junction to Pukemiro Colliery. An English-built industrial locomotive hauls coal wagons and a carriage for miners. At Glen Afton, terminus of the branch, there is another colliery railway and another English industrial locomotive.

Widest and narrowest

Northland can claim the colliery railway with the widest gauge in New Zealand and the line with the narrowest. The former is the Kawakawa railway, first to operate in the North Island, which was mentioned in our first article. The latter is a line which used small German-built locomotives to haul mine trucks from the Northern Coal Company's mine at Waro to a siding on the New Zealand Railways where their contents were tipped into railway wagons. Reports indicate that its gauge was 20 inches. It owned three locomotives at various times. One, which went to a little-known line in the Mokau area, has been recently resurrected by the Tauranga Junior Chamber of Commerce and installed in a children's playground. Another was taken over by the Portland Cement Company and used at its works on Limestone Island and at Portland. A few years ago it was acquired by the Old Time Transport Preservation League. It will be handed over to the proposed New Zealand Museum of Technology and Transport for exhibition at Western Springs in Auckland.

Crossed 17 bridges

Another narrow gauge line connected the Egmont Colliery on the Taranaki field with Tangarakau station, three miles 60 chains away. This two-foot gauge line was worked by an engine built by Andrew Barclay and Sons of Scotland in 1928. Although it measured only 14 ft. 8 in. in overall length and 8 ft. 4 in. to the top of its smokestack, it worked hard and well. Its normal load was about 26 tons, but it often hauled trains weighing up to 33 tons. The railway ran along the side of the Tangarakau Gorge on easy grades and crossed 17 bridges ranging in length from 30 ft. to 150 ft. The bridges, although built for a light mine railway, were almost to the standards laid down for N.Z.R. bridges. Very few traces remain of this line, which was dismantled during the 1940s, although the locomotive's boiler was used to supply steam for the bath house at Tatu State Mine.

Many New Zealand colliery railways used small and antiquated locomotives and equipment but they performed their task of transporting coal efficiently and economically. In our final article we will describe two rather picturesque lines and another which is everything that a modern railway should be.

★

The material for this article was obtained from the New Zealand Railway Observer, the journal of the New Zealand Railway and Locomotive Society.

GASIFICATION *(contd. from p.15)*

For Lurgi gasification large quantities of oxygen are also needed — Westfield will consume more than 190 tons a day at a pressure of 29 atmospheres when on full load. For this reason the works have the first tonnage oxygen plant to be installed in a British gasworks.

The oxygen plant, designed and built by British Oxygen Linde Limited, operates on the liquid pump principle, separating air by fractionation and rectification into its components oxygen and nitrogen. The latter gas will be used for diluting the town gas before it leaves the works.

Discharge of purification plant gases, together with boiler flue gases, presented a chimney stack problem. The solution is a reinforced concrete shell, 275 ft. high, containing three brick shafts. Ventilation holes in the concrete, together with access floors, make it possible for any one of the brick shafts to be taken out of use for inspection or repair while the others remain in service.

—from "Engineering", June 24, 1960.

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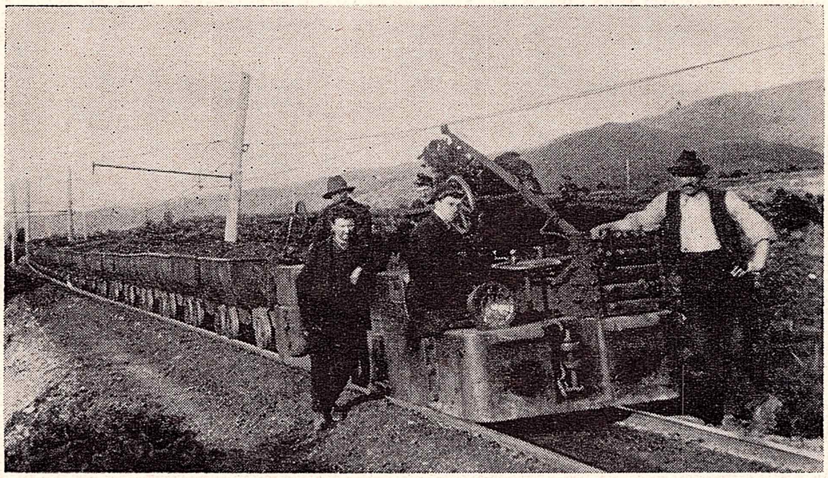
N.Z. PUBLICITY IN JAPAN

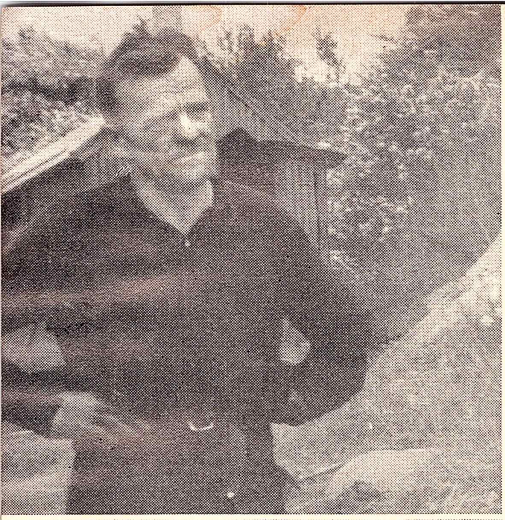
The Japanese newspaper Asahi Evening News, published in Tokyo, printed a special 20-page New Zealand-Japan trade supplement with their August 10, 1960, edition.

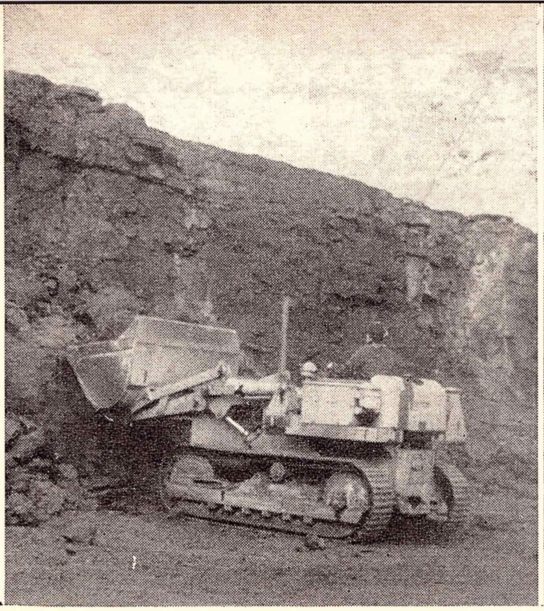
Amongst the stories in this supplement was an illustrated article on the Paparoa Mine, the coal trade agreement with Japan and the shipping of the coal to that far-away country.

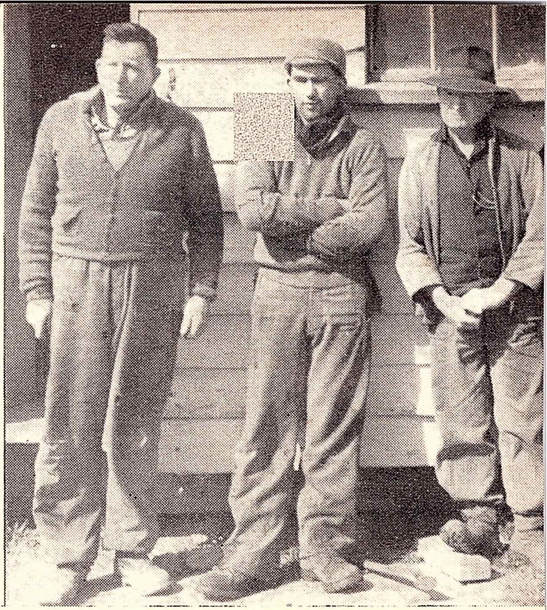


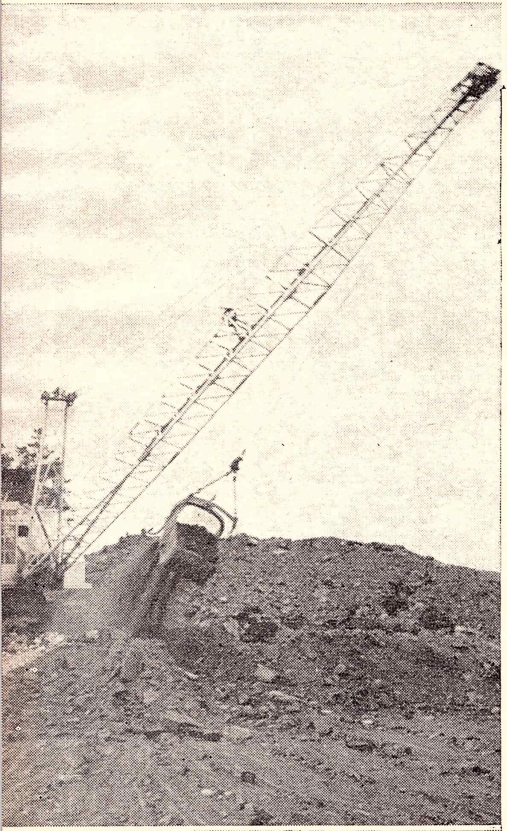
An electric locomotive hauling coal from the Stockton mine stops to have its photograph taken some time in 1916. The men at the front of the locomotive are (from left to right) A. Smallholme, R. Jenkins and J. Hill.

Photograph: Alexander Turnbull Library.









The Opencasts at Gore

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BECAUSE of the widespread fame of the West Coast and the Waikato, many people lose sight of the fact that there are vast untapped coalfields in Southland in the immediate vicinity of Gore. In fact, all the countryside around Gore is just one big coalfield.

Under an earth cover from a few inches to 50 or 60 feet thick, this particular part of Southland is an almost continuous bed of coal extending for miles in all directions.

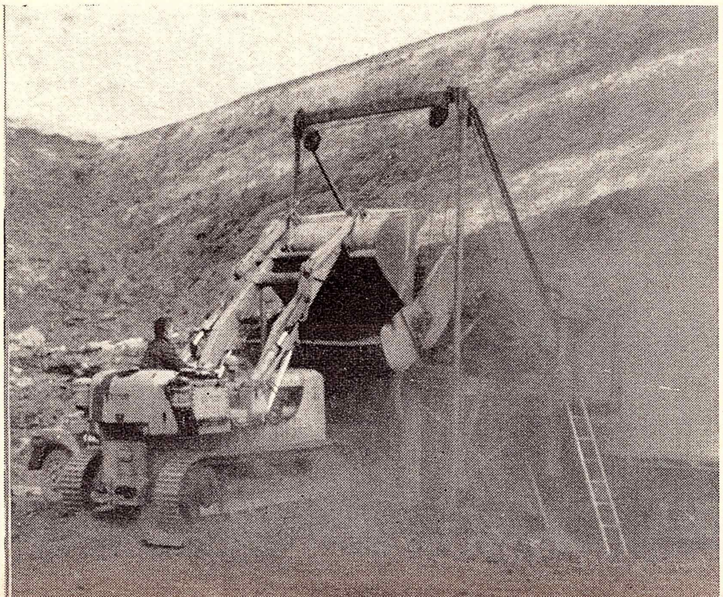
Trees grow with their roots penetrating into the coal, roads are laid through coal beds, the railway runs over coal, houses are built upon coal. And yet, the traveller, seeing the green countryside and the multitude of sheep peacefully grazing, would not suspect that with the removal of a few feet of earth he could start his own coalmine almost anywhere. Indeed, some of the factories have done just that.

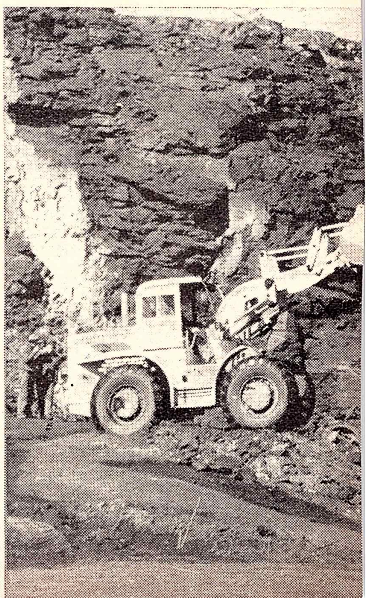
One of the largest of the mines in this area is the Newvale opencast at Waimumu. Under the managership of Mr W. G. Deans, this mine can produce 130 tons of coal a day. The coal is a good lignite, the screened coal being used for household purposes and the crushed coal for the factories.

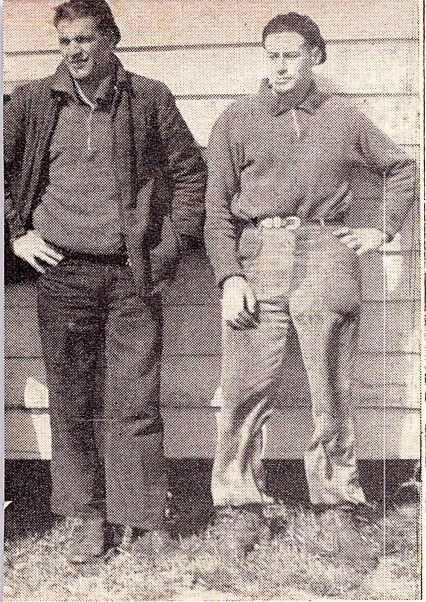
Newvale has one of the very few Caterpillar Payloaders in New Zealand and this great machine is capable of shifting large quantities of coal. Newvale supplies the fuel for the Lactose sugar of milk factory at Edendale.

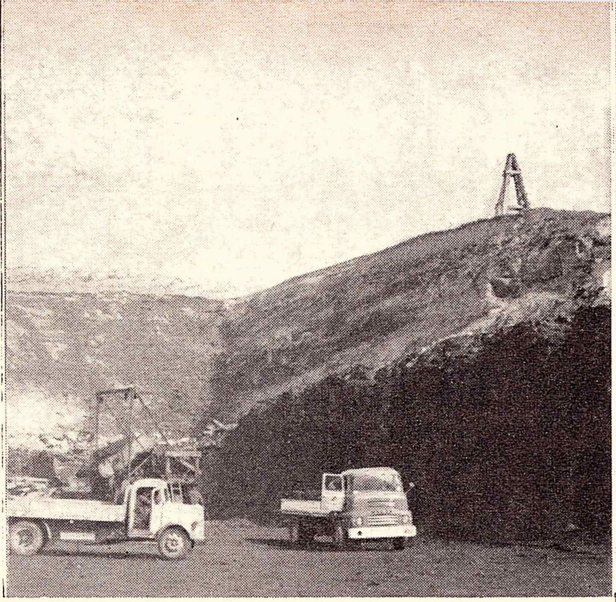
The Waimumu opencast is another great pit dug deep into the countryside. The coal seam is 64 feet through and 40 feet of overburden had to be removed before coal was uncovered. This mine is managed by Stan Ellison, who has had 20 years' experience in opencast mining.

The coal is screened at the mine, the screened coal being used for household consumption and the slack used in factories. A tribute to the ingenuity of these









mining engineers is the creek which has been piped over the top of the mine and now stands supported on high pillars of coal.

The Paper Mills opencast at Mataura supplies, as its name implies, the New Zealand Paper Mills. This mine is managed by Bill Steel who has four men working under his direction. The coal is loosened with explosives and then the big shovel breaks it up and loads it on to the trucks which transport it straight to the mills where it is crushed and screened to a uniform size of approximately one inch maximum.

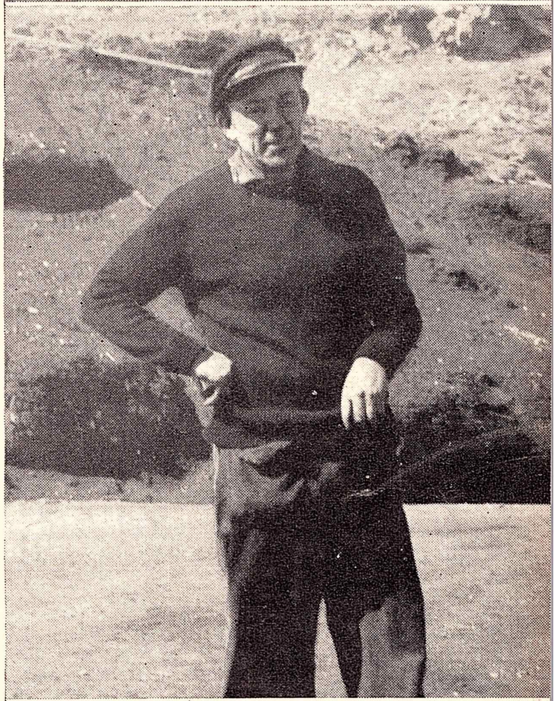
As each new cut is made, the overburden is used to fill the previous cut so that no mining scars are left to deface the countryside. A little cultivation and the ground is as good as before. When the overburden can no longer fill the pit, water is allowed to seep in and the new lake could be stocked with duck or fish.

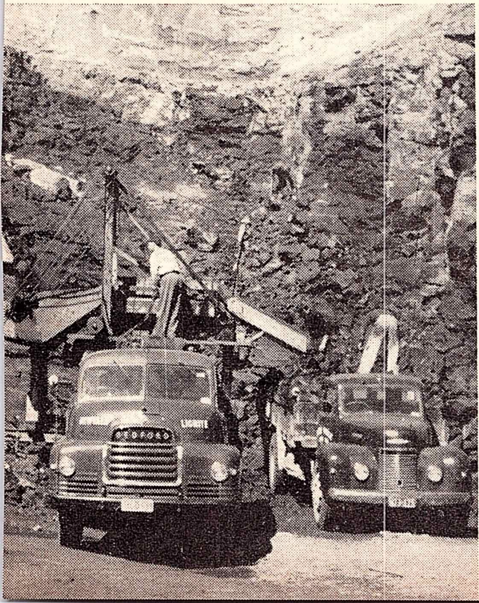
Amongst the smaller mines, Raby opencast also produces a good grade of lignite. This mine is managed by Mr S. Terry. In this particular pit a layer of clinker near the top of the seam shows where an early bushfire burnt out the higher layers of coal.

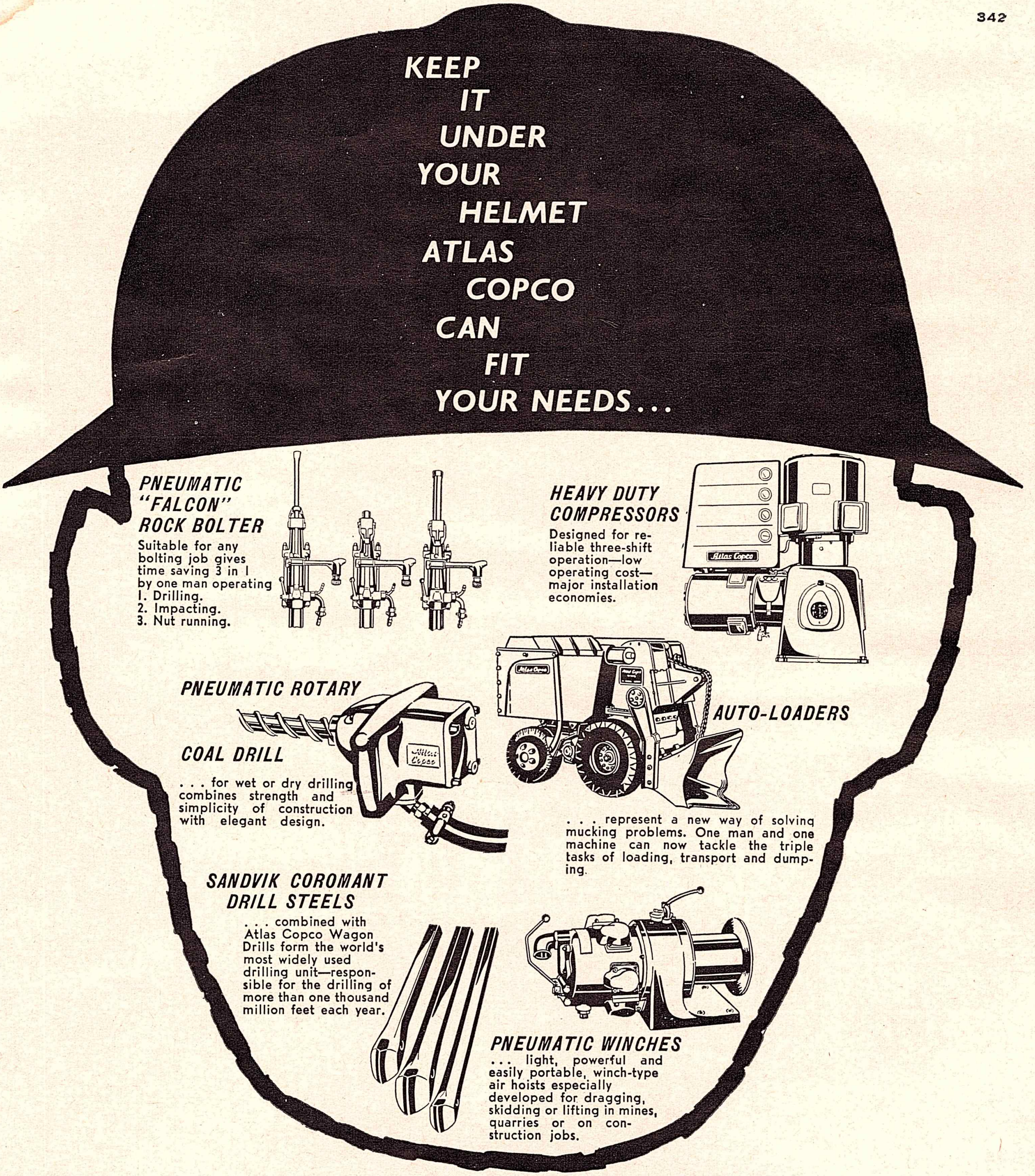
Other mines in the area are Crossed Keys (managed by Mr D. A. Bradley); Hedgehope (J. Larking); Millers Pit, Wendon Valley (J. Miller); Diamond Lignite, Ashers Siding (W. J. Holland); Waituna, Kapuka (S. Chalmers); Newholm, Conical Hills (L. Scammell); Midway, Mataura (E. J. Genge); and Springfield Mine, Waimatua (B. King).

Because of the very mild winter experienced this year in the south there has been a drop in the consumption of coal. The mining people are not worried, however, as they all agree that there is a big future for the opencasts in Southland.

Illustrations (reading clockwise from top left): Mr S. Terry of Raby Opencast, Croydon Bush; Waimumu Opencast; Islay Matheson, Dave Walker, Stan Allison, Ian Christie and Norm Perry outside the lunchroom at Waimumu Opencast mine; This is Waimumu Opencast—overburden and coal face are here sharply defined; Norm Perry and Ian Christie at Waimumu Opencast; Dick Bryant, chip man at Newvale; Jim Dodds, Norm Middlemas and John Larkin at Hedgehope Opencast, Waimumu; Hedgehope Opencast, Waimumu; The big Caterpillar loader at Newvale Opencast; Dust blowing in the wind at the screening plant, Waimumu; Sid Beer and Reg Highsted carry the welder with John Scobie in the background—Newvale Opencast; A large dragline in action.







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In thanks for a most informative tour of Southland "COAL" extends BOUQUETS to . . .

Mr Milton Fahey on tiptoes to make his point to Don Brown and Nelson Hill at Ohai. Don is now mine manager at Benneydale.

Stan Ellison and Garth Richards at Waimumu.

Jim Stott (Dr), who extended to us typical Dunedin hospitality.

Garth Richards, our guide and escort around the opencasts of Southland. He is mining inspector in this area and held in high regard by all who know him.

Bill Steel, manager of Paper Mills mine. He's an ex-R.A.F. pilot with two operational tours behind him (and that's something). We met Bill on the level above his mine, and he escorted us not only around the opencast but also through the paper mills, where we received an interesting souvenir.

Milton Fahey, district manager of State Coal in Invercargill. He took over from Garth Richards at Gore, transported us to Invercargill and from there out to the mines at Ohai.

Cecil Hunt, deputy at Ohai. He had finished his day's work when we met him, but was happy to go back just to show us around the underground mine at Ohai. That is enthusiasm, indeed.

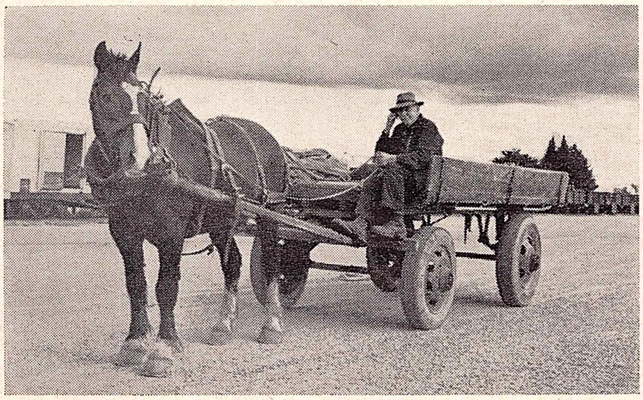
Peg Taylor, Ohai Hotel, for her Southland hospitality during our visit.

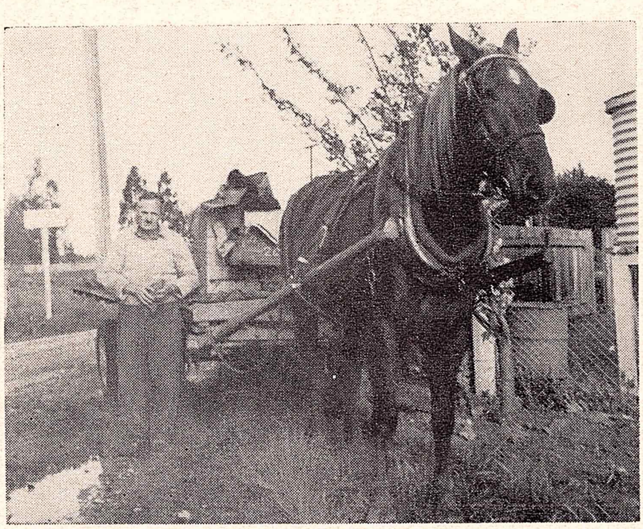
ALL mine managers, mine workers, truck drivers and everybody whose voluntary assistance and unfailing courtesy did so much to smooth our path and make our visit interesting and informative.

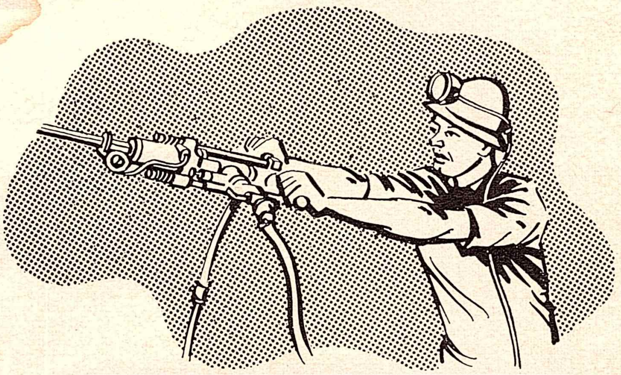
Who says the day of the horse is over?

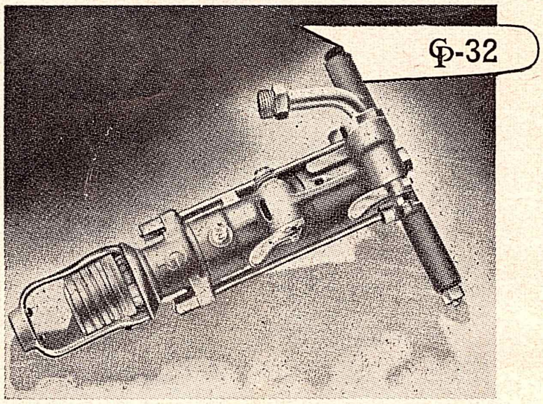
Mr Josiah Wilson is 84, but much too active to retire. He still delivers coal by horse and cart in Mataura.

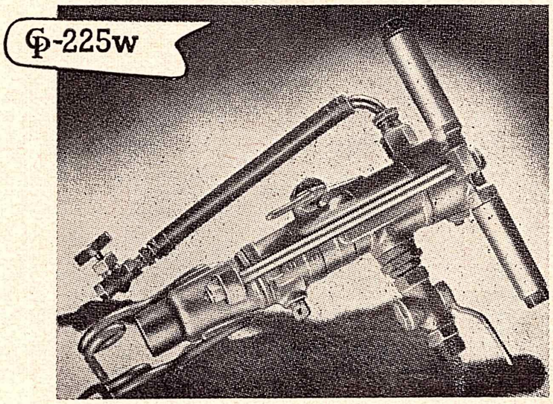
Mr Albert Ford of Winton has delivered coal by horse and cart for the last ten years.











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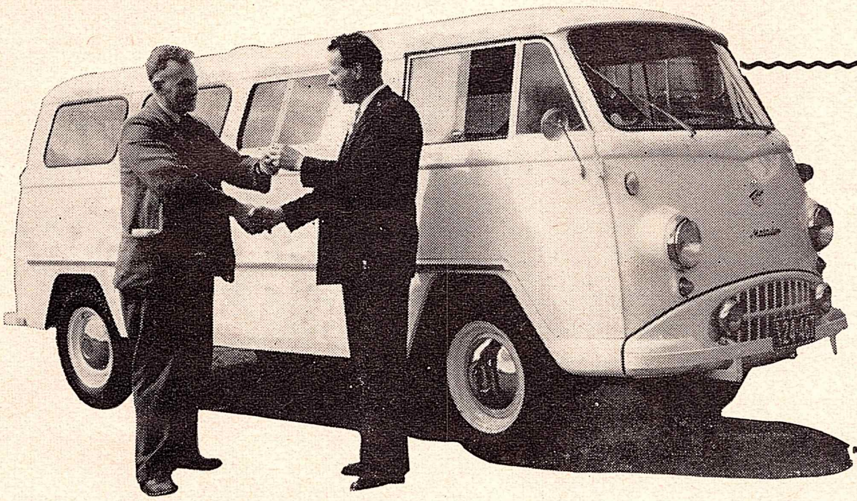
The ABC of Safety

A is for accident; ever the same;
Death or disablement; who is to blame?
B is for breadwinner; he should have a care,
When earnings get low, the cupboard gets bare.
C stands for carelessness, curse of mankind,
Cause of the crippled and cause of the blind.
D denotes danger; best give it a wide berth,
If your days would be long upon this pleasant earth.
E for excuse, the careless man's tool,
To cover his fault after breaking a rule.
F is your future, apparently bright,
While your actions are safe and your conduct is right.
G is for grief that trails in the wake,
Of the workman when he makes a foolish mistake.
H stands for health; keep it as long as you can,
If you would be a happy and prosperous man.
I stands for injury you will receive,
If caution you shun, or in care disbelieve.
J is for job that passes you by,
When the boss has been told you're a haphazard guy.
K is for killer, that sinister foe;
Fight him with caution wherever you go.
L is the laggard who cares not a jot,
For safety or caution; content with his lot.
M for mistake, be it little or great,
Its consequence possibly carries your fate.
N for neglect; best cast aside,
Or soon, very soon, you'll be "booked for a ride".
O is for orders, which must be obeyed,
Disaster has followed when they've been delayed.
P stands for pain that the injured must bear,
Let this be a lesson; in future take care.
Q for the question the learner should ask,
Whenever in doubt and not sure of his task.
R is for reason, just pain common sense;
Face the task sanely and do not be dense.
S is for safety, your keystone, your friend,
Your guide and your counsellor on till the end.
T is for trials of the ones who heed not,
No one to blame, but themselves if they're caught.
U for uncertainty, dangerous foe,
Cast it aside and make sure that you know.
V is for victory, yours if you will,
Go all out for safety: make accidents *NIL*.
W stands for a warning: *TAKE CARE!*
Lest people will point to your grave and say "THERE!"
X marks the spot where they laid him to rest;
His guess was wrong, but he should not have guessed.
Y is yourself, most important of all,
Pick up; don't be picked up; don't wait till you fall.
Z is a sticker: it must stand for zest,
The virtue that brings out what in you is best.

With acknowledgment to "The Canadian Mining Journal".



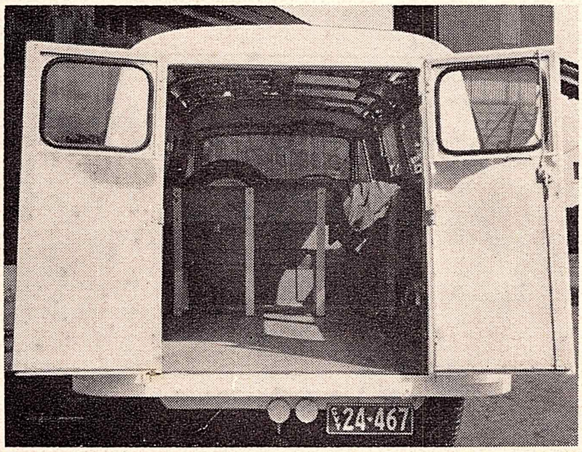
GRANITY gets a new RESCUE VAN

On Tuesday, September 20, 1960, a new rescue van was handed over at Christchurch to Mr A. Auld, superintendent of the Rescue Station, for use at the mines on the Coast.

It is a beautiful new Tempo Matador, and will carry the latest rescue equipment including two stretchers, Proto breathing sets, fire fighting gear and other necessary apparatus for all types of rescue work.

Mr Auld has completed the interior fittings at Greymouth and the van is now in service on the Coast.

Similar replacement vans are planned for other rescue stations, but these will be completed at the body builder's, using this van as a prototype.



(Top) Mr V. Neat of Croydon Motors, Christchurch, handing over the keys of the van to Mr A. Auld, superintendent of rescue stations.

(Centre right) Left to right, Mr V. Neat, Croydon Motors; Mr H. Calvert and Mr A. G. Lazarus, State Coal, Christchurch; Mr A. Auld, Greymouth. (Above) Interior view of ambulance.

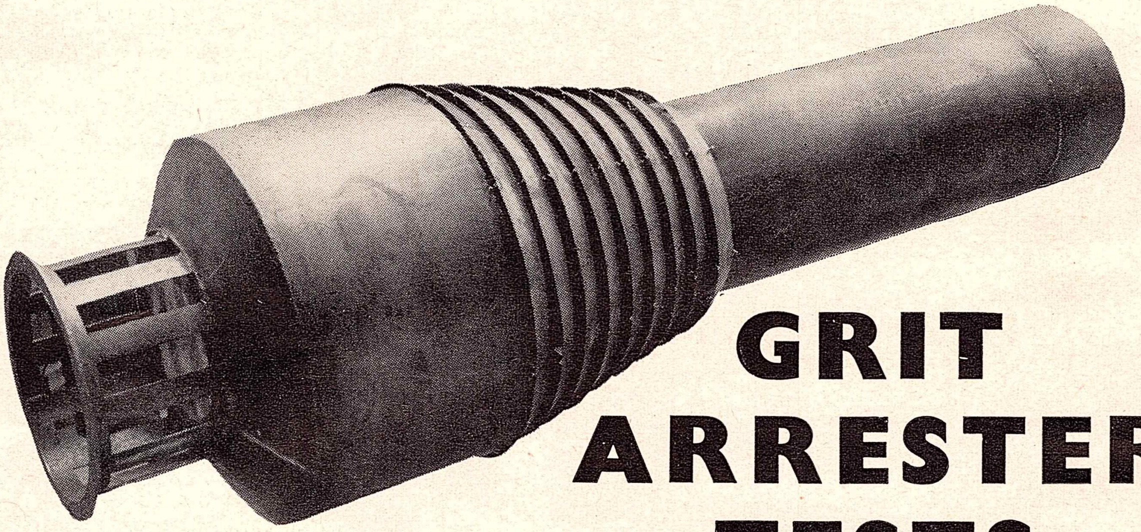
Substitute Mine at Rewanui

Five weeks after an underground fire compelled the Gorge Creek private mine, near the head of the Rewanui incline, to be abandoned, a substitute mine was opened just opposite the sealed off section.

As a result of the seam having an outcrop, the 11 men Spark and Party will be able to resume production right from the start of this new venture.

Bins, roperoad, winch, bathhouse and other equipment will be available for use without any major adjustment.

Investigations into the operation of a grit arrester suitable for installation on relatively small boiler plant have been carried out recently in the Dominion Laboratory.

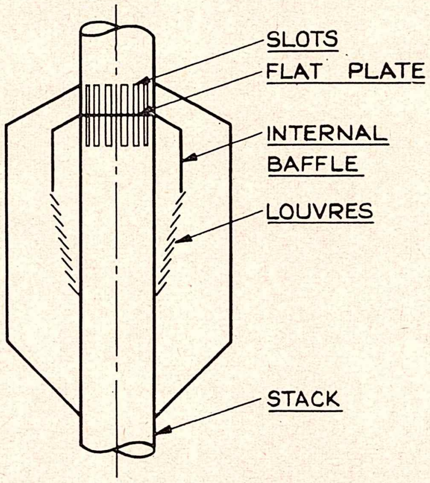


GRIT ARRESTER TESTS

The general features of the arrester and the basis of its operation are illustrated in the figures. The normal passage of flue gas up the stack is blocked by a flat plate and the gases pass into the arrester through longitudinal slots cut in the wall of the stack, passing downwards inside the internal baffle. They then pass through a system of concentric louvres into the outer chamber, upwards through this chamber, and, finally, they reenter the stack through the upper slots.

The grit arrester combines gravity separation and inertial separation of the grit from the flue gases. The dust-laden gases passing downwards inside the internal baffle are subjected to a sudden change in direction. Some of the air passes out through the upper louvres, but inertia tends to carry the grit downwards, concentrating the particles in the gas which passes out through the bottom louvres. At this lower level, the upward velocity in the outer chamber is relatively low. More effective gravity separation will be obtained at this lower velocity.

The arrester's efficiency of grit removal depends on the size of the grit and on the flow of gas through it. Grit is generally measured in units of microns. Although the human eye is capable, under favourable conditions, of seeing particles as small as 40 microns (about 1.6 thousandths of an inch), the removal of particles with diameters larger than 100 microns (about 4 thousandths of an inch) would eliminate most of the practical problems of grit emission from small boilers.

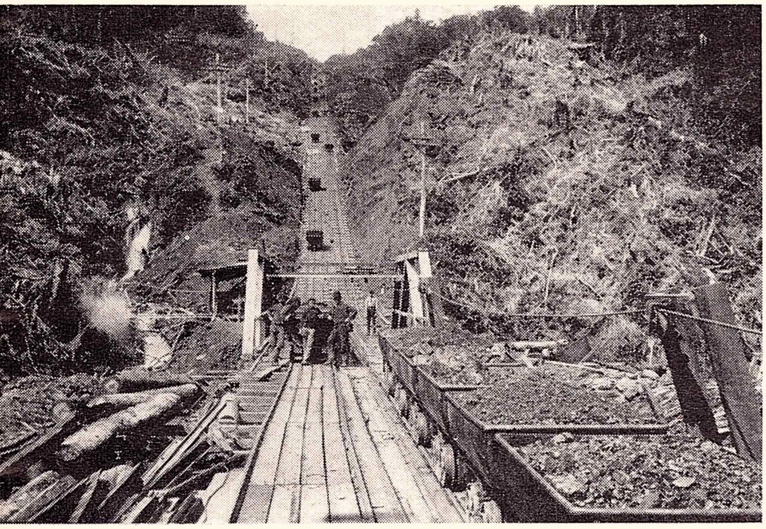


The performance of the arrester has been measured with different throughputs of gas and with grit of various particle-sizes. For instance, at a gas throughput such as is commonly found in commercial operation, 92 per cent of the grit with a particle diameter of 100 microns is removed in the arrester. At lower gas velocities and with larger particles, higher collection efficiencies are obtained.

The frictional losses of pressure in the flue gases passing through the arrester have also been ascertained, and modifications have been made to the slots to reduce these losses. Under normal operating conditions the pressure loss is sufficiently low to permit the use of the grit arrester on natural-draught boilers.

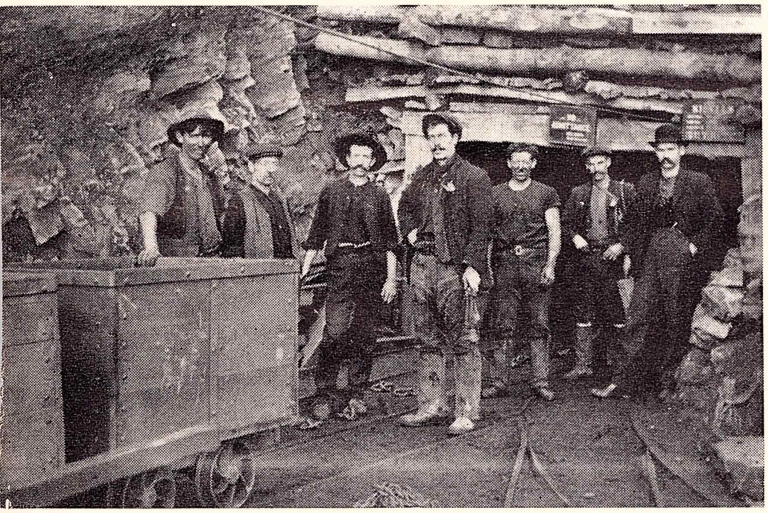
The results of these tests are presented in detail in Dominion Laboratory Report 2027, "Grit Arrester Tests", by W. J. S. Parkes, R. E. Dall and P. A. Toynbee, and the design of a commercial grit arrester is described. Copies of this report are available to operators of coal-burning plant considering the installation of arresters on relatively small boilers — up to about 6000 lb of steam per hour. The Dominion Laboratory would welcome the opportunity of co-operating with any engineering organisation interested in the fabrication of commercial grit arresters based on this general design.

OLD TIMERS GALLERY



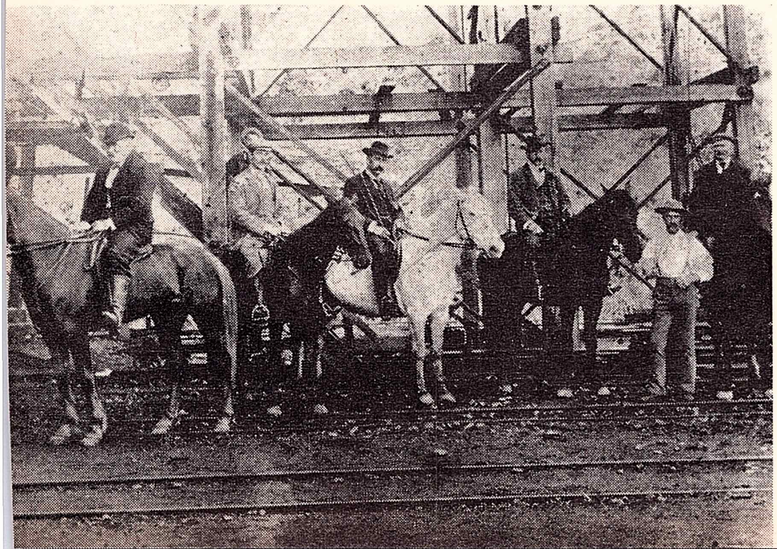
This is the Stockton Incline in 1908.

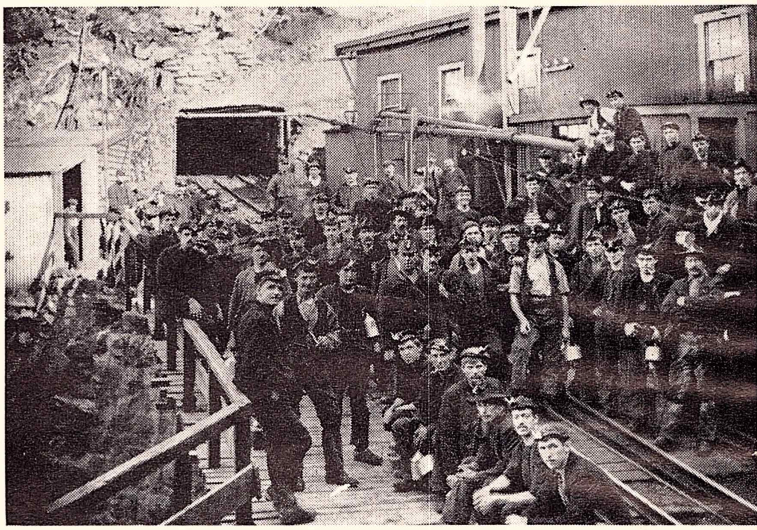
(All pictures by courtesy Alexander Turnbull Library)



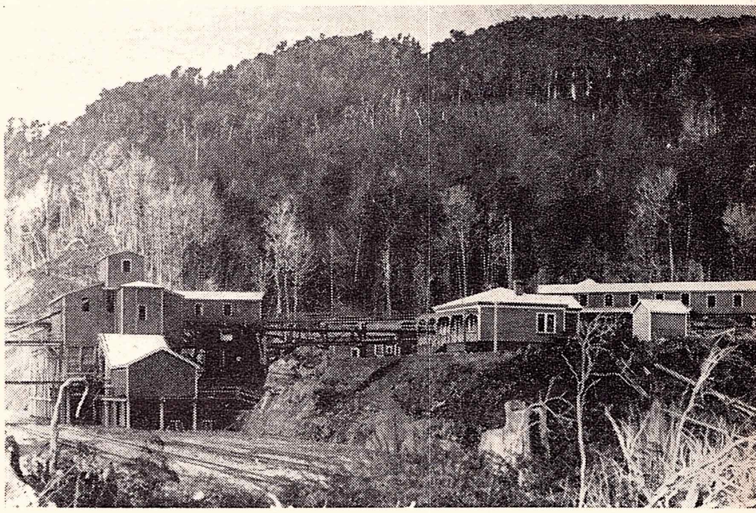
Anybody know who these miners are, or when this picture was taken?

The Granity Bins in 1900 showing, from left to right, Tom Murray, Dr Wills, J. Dixon, J. Green and W. McEwan.



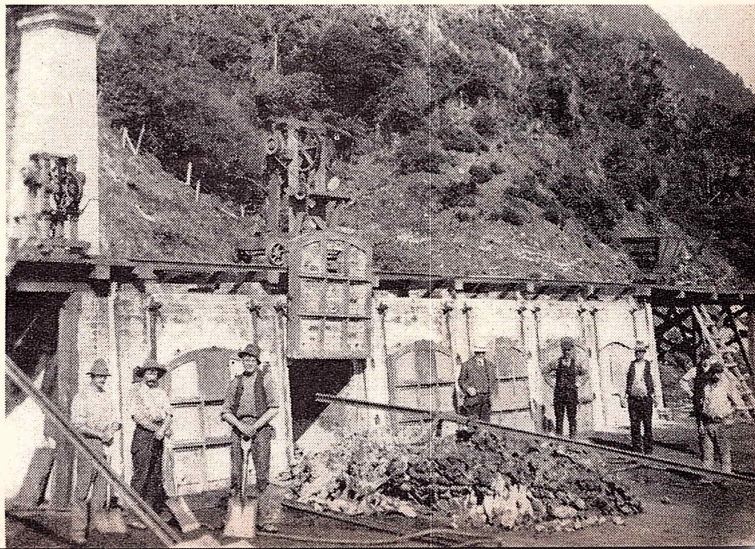


These young men would be real old timers today. This photo was taken outside a Buller mine about 1890. Note the oil lamps then used in mines.



Bins and offices of Dunollie State Mine.

The coke ovens at Granity in 1910. Three men at left unknown, then comes W. Dunn, D. Buist, J. Kerr, —. Bradley, W. Dunn, Jun., D. Johnson.



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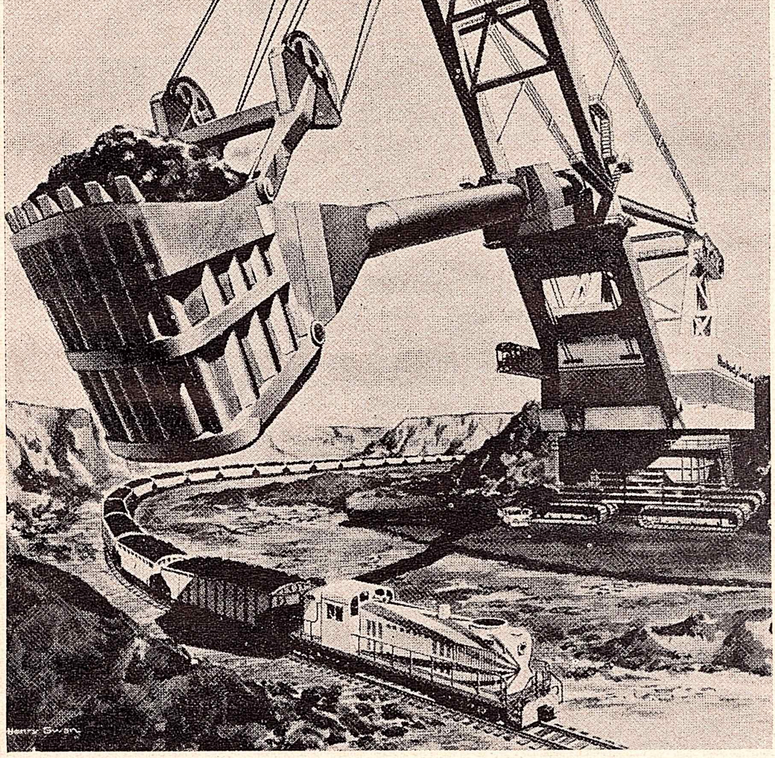


They do things in a big way in America. One of the latest projects is a mammoth excavator, designed to take 115 cubic yards of earth in one bite. It has been ordered from Bucyrus-Erie Co., South Milwaukee, Wis., for Peabody Coal Co., St Louis, Missouri, and should be operating by August, 1962.

The statistics of the machine are colossal. The boom of the shovel will be 210 feet high—as tall as a 20-storey building or 10 feet higher than the top of the Auckland Harbour Bridge. Its total working weight will be about 7000 tons — the weight of a light cruiser; and it requires 12,000 horsepower to operate—enough power to supply a town of 12,000 people.

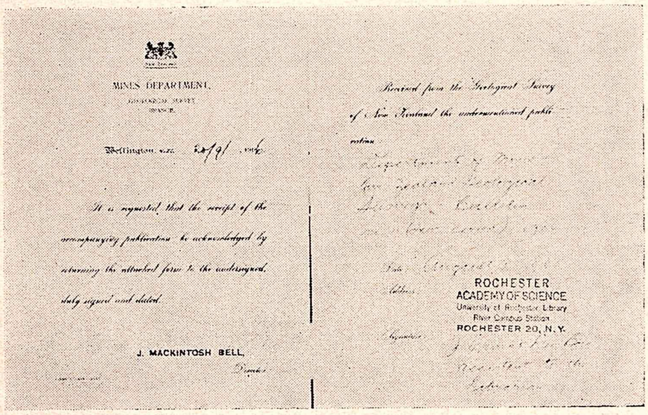
Four sets of caterpillar tracks are each eight feet high, and the hydraulic system holds 4000 gallons. Digging to dumping (464 feet away) takes only 50 seconds.

The machine is operated by a single operator using two simple hand levers and two foot pedals. The air conditioned cab where he works—fifty feet from the ground (or five stories up)—is reached by a special passenger lift.

Once in operation, this giant will remove an estimated three million yards of overburden a month, uncovering the deeply buried coal for the smaller shovels to pick up.

When you realise that the biggest shovels in New Zealand move only five cubic yards at a time, while this proposed monster will take 115 cubic yards at one bite, you have some idea of the size of this colossal stripping shovel.

SLOW BUT SURE



MINES DEPARTMENT.

Wellington, N.Z. 20/9/ 1906

It is requested that the receipt of the accompanying publication be acknowledged by returning the attached form to the undersigned, duly signed and dated.

J. MACKINTOSH BELL,

Director.

Received from the Geological Survey of New Zealand the undermentioned publication

Department of Mines
New Zealand Geological
Survey Bulletin

Date August

Address ROCHESTER
ACADEMY OF SCIENCE
University of Rochester Library
River Campus Station
ROCHESTER 20, N.Y.

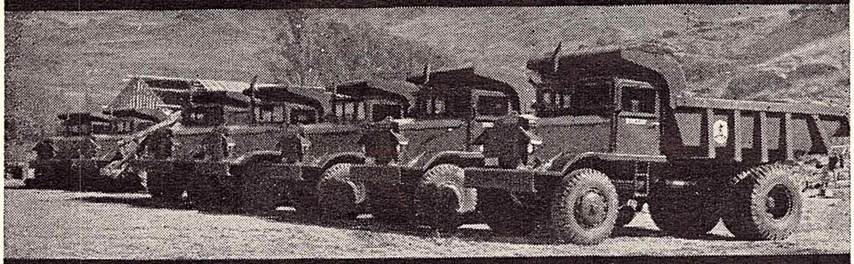
Signature J. Ernest Du Bois
Assistant to the
Librarian

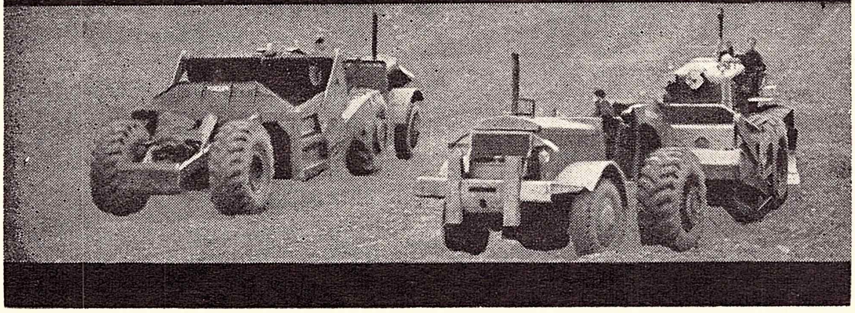
Last September the Mines Department received the acknowledgment for a Bulletin sent to the Rochester Academy of Science, U.S.A.

There is nothing unusual about that—apart from the fact that the Bulletin had been sent to the Academy in 1906. On this reckoning, for bulletins sent today we should expect a receipt somewhere about the year 2014.

In fairness to the Academy we must point out that this belated receipt was returned in consequence of a delightful sense of humour shown by the Assistant to the Librarian, Mr J. Ernest Du Bois.

It takes EUCLIDS to put the 'pay' into 'payload'





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Euclid Coal Haulers. Tractor-trailer unit properly engineered as complete unit. Rugged construction with large capacity up to 75 yds., and plenty of power giving top speed fully laden of 35 m.p.h.

Euclid Scrapers. A complete range up to the 24 yd. twin engined units. Tractor-trailer and overhung units. Impressive power, no-spin differentials. Large tyres to give greater traction, engineered for trouble-free performance over long periods.

Please send full information about Euclid Equipment for more profitable coal handling.

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BRUNNER Re-discovered

On January 25, 1848, Thomas Brunner, travelling by canoe up the Grey River, stepped ashore on Motutapu Island and took the first historic steps that were to result in his discovery of coal in that area.

On November 5, 1960, Thomas Brunner lived again. Promptly at one canoes, manned by Arahura Maoris, paddled majestically upstream to the very spot where Thomas Brunner had landed 112 years before. It was a dramatic moment as Thomas Brunner (this role taken by the mayor of Brunner, Mr L. E. Richardson) stepped from the canoe as his famous predecessor had done, and approached the outcrop of coal that is still visible at this point.

While the Maoris built the fire, Thomas Brunner recounted extracts from the original explorer's diary, and as the fire blazed brighter, he approached the group and fed some of the original coal into the flames. *No one could fail to be touched at this tense and memorable scene. It was the history of Brunner re-enacted.*

At the conclusion of this ceremony, the mayor thanked those who had taken part, those who had made the function possible and those who had attended to ensure its success.

Mr O. H. Jackson, deputy-mayor of Greymouth and chairman of the Historic Places Trust, expressed his pride at being associated with the people and the committee on such an historic occasion.

The procession that followed started at Wallsend and went to the Taylor Domain where the afternoon entertainment included hakas by the Arahura Maoris, a lolly scramble and treasure hunt, a junior "Miss Brunner" contest (won by June Richards) and many games, stalls and refreshment counters. Mr Roy Beadle enlivened proceedings with a monster auction sale of goods and produce.

In the evening the Christchurch Concert Party's presentation in the Dobson Hall was packed to capacity.

The day was also Guy Fawkes' Day, so after the concert the crowd adjourned to the Dobson Domain to see the bonfire and fireworks display.

Once the bonfire was under way its glare could be seen for miles. And in addition to the fireworks supplied by the Centennial Committee, many families let off their own private stock of pyrotechnics, so that entertainment was non-stop.

The day and the celebrations concluded with the Centennial Ball held in the Dobson Hall. It was well attended and during the evening Miss Neilson was selected as "Belle of the Ball".

It was a day that will live long in the memories of all West Coasters who were there.

HAVE A SHOT!

• • •

The photo competition in "Coal" magazine offers some of the best cash prizes to be won of any magazine in New Zealand today—and you don't have to be a professional photographer to win them.

The main essential of the prize-winner must be "appeal". Look at this quarter's winner. Technically it is a long way from perfect, but the appeal is in every action from the "Go on, let's see YOU do it" attitude of the small boys to the half-shocked, half-curious interest of older sister.

Originality and clarity are other essential features. So use your imagination, pick your subject, see the location is right, ask yourself, "Will this picture interest people outside of my own family?" and then use your judgment as to focus, light and exposure.

If you have a good, sharp, appealing picture, send it in together with the negative, and you might be £8, £3 or £1 richer. We return all negatives and unused prints, so you can't lose.

Giant Turbo-Alternator is coal fed

One of the two giant generating units which have just been ordered by the Central Electricity Generating Board will be built at the Rugby Stafford and Netherton Works of the English Electric Company Limited. It will be one of Britain's first 375,000 kilowatt single-shaft steam turbo-alternator sets to use "supercritical" steam. The second set will be built by A.E.I., Manchester, and the two together will produce sufficient power to meet the needs of a city the size of greater London.

The two units are for the Drakelow "C" power station, and with their boilers — being made by Babcock and Wilcox, and International Combustion Ltd. — are worth some £15 million.

The very high steam temperature and pressure used will give a thermal efficiency of some 40 per cent and so reduce capital and operating costs. An intensive research and development programme has produced metals for the turbine casing and blading, suitable for the rigorous conditions where 2,500,000 lb of steam per hour will be supplied to the turbine at a temperature of 1100 degrees Fahrenheit and a pressure of 3500 lb. per square inch. It has also enabled cooling techniques to be used in the alternator rotor and stator, which mean that the machine will be only a few feet longer than the "standard" 60 mw sets installed in Drakelow "A" station. These economies help to keep the cost of power to the consumer at the lowest possible level.

The Drakelow "C" station, when these units are installed, will be one of the largest in Europe. It is in the Trent Valley, not far from Burton, near the East Midlands coalfields. The two 375 MW generating units are due to come into operation by 1965.

tell us a story

Every quarter we offer £5 worth of cash prizes for a good story on mining. Let us have your favourite . . . just address it to—"Tell Us a Story", c/o "N.Z. Coal", Box 5042, Wellington.

The underground horse-road was rather low in height but the roof was as hard as an anvil, so no timber supports were required. However, there were a few knobs or parts of the roof projecting downwards which the horse would hit if it raised its head. Although the horse wore a skull-cap of felt-lined leather, the sympathetic horse-driver thought he would try to remove a particular projection with a pick.

The miners were soon waiting for trucks, so the Deputy went to discover the reason and reprimanded the horse-driver, telling him it would need explosives to get that kind of stone down, and continued, "Why didn't tha tak some out ut floor where it's softer? Tha must be daft!" The horse-driver, also a "Lanc", replied "It's thee that's daft! It's horse's head that gets bumped, not its feet."

—First prize of £2/10/- goes to A.O.W., Buller, for this vernacular story.

★ ★ ★

When fire broke out underground in a little co-op. mine, Mr Hadcroft was called in to give the benefit of his knowledge in the fire-fighting.

Now, one of the party whom we shall call simply "Bill" was a good, practical miner but somewhat short on the theory of mine gases, their effect and how to detect them.

Mr Hadcroft left this chap at one danger point with a canary, telling him to keep an eye on the bird and it would let him know when there was any dangerous accumulation of firedamp. Mr Hadcroft continued on around the rest of the mine to get a line on the layout. On his return he was met by a very wrathful Bill and a very dead canary. "Look!" roared Bill, "the bloody bird is dead and it never cheeped once. What sort of a bird is it!"

Bill apparently expected a swan song at the least.

—Second prize of £1/10/- rewards "Canary" of Huntly for this story that points out the moral—make sure your subordinates know what you *mean* as well as what you say.

★ ★ ★

Bill Abernethy and Frank Moir are firm friends, and to this day Frank is convinced that Bill saved his life.

The incident occurred one long weekend when their football team had defeated Owaka, the leading team in the competition on the Saturday. They celebrated their unexpected win with a party that lasted most of Saturday night and set off early Sunday morning for Tahakopa, where they had arranged a friendly match against a combined sawmillers' team. Jack Ford provided two buggies and two gigs for their transport, and the frequent stops for refreshment served to slake their thirst and fortify them against the cold.

All went well until they reached the ford across the Tahakopa River. Half way across Bill said, "Shay, I think the horsh ish shwimmin', mate."

"Hang on an' I'll take a look," Frank replied.

He peered over the front of the gig and then missed his footing and fell head first into the river. Bill grabbed one of the disappearing feet and held on like grim death.

With his head four feet under water and the horse's legs kicking near him, Frank was in serious difficulties. Bill would have hung on indefinitely if his team mates had not shouted to let him go. As it was they had to apply their scant knowledge of resuscitation before Frank disgorged large quantities of tidal water.

The water was only five feet deep, but Frank was never convinced that Bill had not that day saved his life.

—Third prize of £1 is well earned by J. Warnock, R.M.D., Manaia, Taranaki.

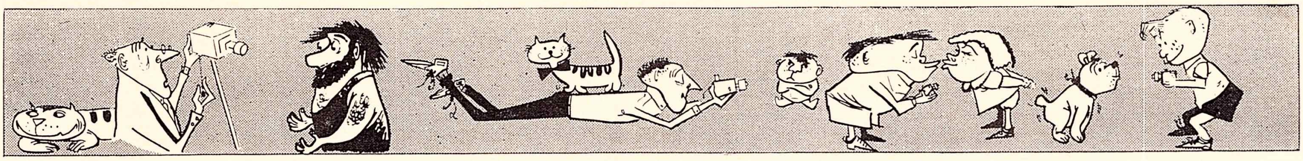
It was at a fancy dress ball that a head official, his wife being absent on holiday, decided to let his hair down and, observing a lady as a wallflower for the third dance in succession, sympathetically approached and requested the pleasure. He was greeted with a demure smile and acceptance, and soon demonstrated that he was no novice at tripping the light fantastic.

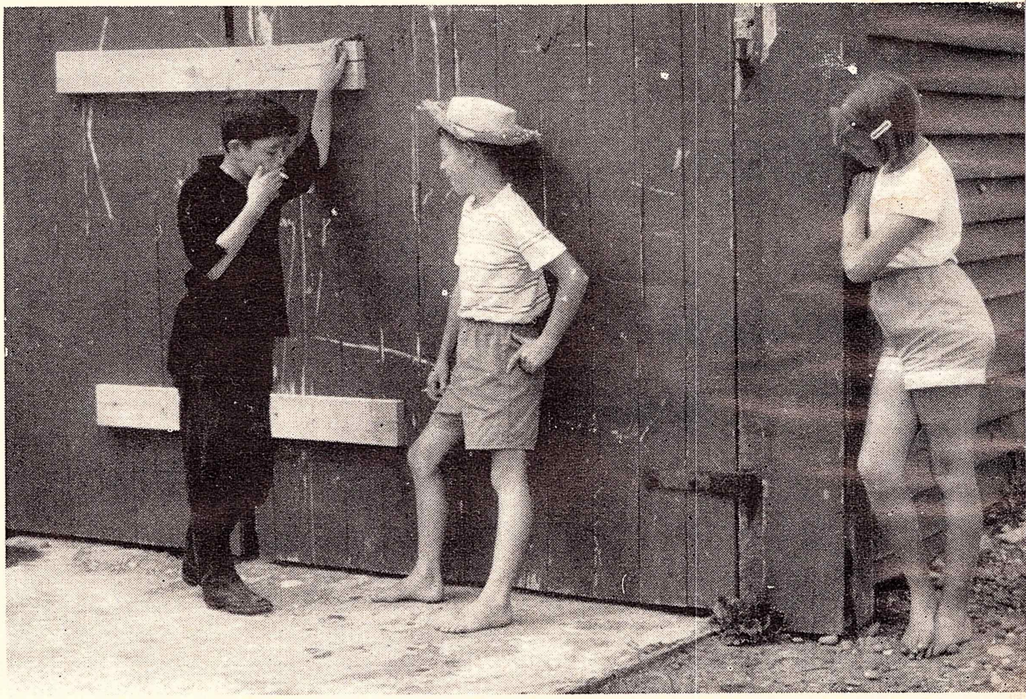
It was a one-step and when executing a fancy reverse-step, he stepped fair on his partner's foot, and quickly tendered an apology. Somewhat embarrassed, he continued but at the next reverse-step the lady's foot again got under her partner's. Before he could apologise she exploded with, "Get off my foot, you clumsy so-and-so", to which her bewildered partner blurted out, "By cripes and you are no lady!"

And she certainly wasn't. It was "Lightning," the most easy-going trucker in the mine, whom the girls at the boarding house had dressed up in a flowing ball-dress, long gloves and all the extras, and, being of slim build with a mop of fair curly hair and well tutored in feminine deportment, he looked the part and, until trodden on, played it well.

"Pip", of Dunedin, also gets a 3rd prize of £1.

Certainly, old man! What kind of a favour?





Gee, now, aren't kids just all the same! What'll Mum say when she sees this? ESPECIALLY as the first time she knows about the kids smoking will be when their photo appears in "Coal". Anyway, this delightful, if surreptitious, snapshot "A Sly Puff" wins first prize of £8 for Miss Rosalie Skeats, 32 Peel Street, Cobden. We shall not dwell upon what it wins for the subjects.

Second prize, £3, goes to Mrs D. A. Wylie, Matai Street, Dobson, for the perfectly posed picture "Patience". Mrs Wylie is a consistent competitor who sends in consistently high quality photos.

Jimmy and Rosemary Howden are really white children — but not after "Following Father's Footsteps" in the coal bin. Mrs Howden, of Roa Road, Blackball, has some compensation for her daily bath problems with the third prize of £1.

Rosalie Skeats also gets a Highly Commended for her picture "Pioneers of the Golden Coast".

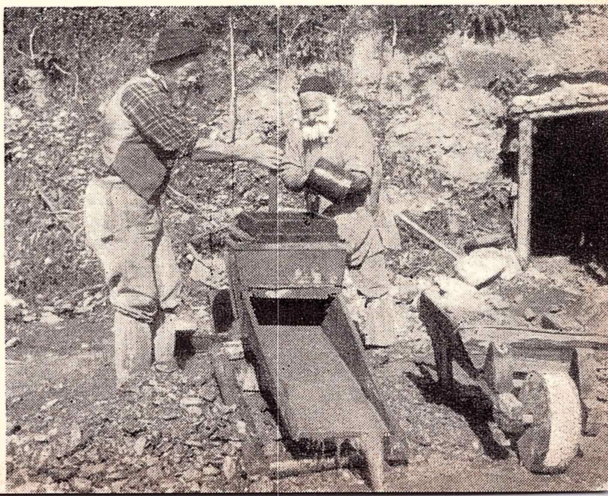
To those who missed this time, "Coal" says keep trying, but please remember that we can only use photos that are clear and will reproduce well.

●

West Coast Photographers take the money again!

●

Closing date for next quarterly competition: FEBRUARY 6, 1961



The Feminine Viewpoint

by Joanna Wells

USING AMERICAN RECIPES

AMERICAN MEASURES AND TERMS EXPLAINED

The food pictures in American books and magazines are so attractive that many housewives are tempted to try out the accompanying recipes. It is unfortunate that in many cases the results are less tempting than the illustrations. Such failures are not due to subversive activities on the part of American food editors (neither vital instructions nor ingredients are omitted) but to the way in which the recipe has been misinterpreted.

American recipes are written in English but there are essential differences between New Zealand and American cooking methods and terminology; these differences are particularly marked in regard to 'baking'; recipes for meal cookery and savoury dishes can be followed fairly well. Some of the ingredients will be unfamiliar, for some — okra, avocados, pecans, Canadian bacon—there is no New Zealand equivalent, but for others it is possible to find a substitute that will not materially affect the result. For lobster read crayfish, for clams substitute pipis or mussels. Other ingredients may be available but under a different name. A pimento is a sweet red pepper and molasses is black treacle.

American v. Imperial measure

The biggest difference that must be understood, and which affects baking in particular, is between the American liquid measure and that used in New Zealand. An American pint measures 16oz; the Imperial pint (as used in New Zealand) measures 20oz.

An American measuring cup is an 8oz cup, a measuring cup of British origin is frequently a 10oz cup. Obviously this can lead to confusion and to mixtures of incorrect consistency.

American recipes are frequently given in cup and spoon measure. This is an *exact* measure. A standard 8oz measuring cup must be used, and American type measuring spoons. A cup of flour does not indicate a scoop of flour from the bin with any cup, as is the New Zealand habit. Flour to be measured should be sifted once, then spooned lightly into the cup to the 8oz mark. This amount of flour weighs exactly 4oz, although the 8oz cup filled with sugar or butter contains 8oz each of the butter and sugar. American recipes given in cups can be quickly translated to weights using the table given.

American measuring spoons must always be levelled. A spoonful means a *level* spoonful, although in New Zealand and British recipes it usually indicates a *heaped* spoonful or double the American equivalent. A level or one tablespoonful of flour in an American recipe is ½oz, in British or New Zealand recipes it can be considered to mean 1oz. A measuring tablespoon holds only about three-quarters of the volume of the average tablespoon used for table setting.

American measure:
1 cup flour = 4oz
1 cup sugar = 8oz
1 cup butter = 8oz
2½ cups liquid = 1 Imperial pint
1 tablespoon flour = ½oz
1 tablespoon sugar = 1oz
1 tablespoon butter = 1oz
4 measuring teaspoons = 1 measuring tablespoon
4 measuring tablespoons = 3 metal tablespoons for table use

Flour poses problems

American recipes frequently stipulate "pastry flour", "bread flour", "cake flour", "all purpose flour" or "enriched flour". In America there are many different flours compounded, each being especially suitable to use for making a particular product. Flour contains both starch and gluten. A flour with more gluten makes better bread than a flour containing less gluten, but makes very tough cakes. The American housewife is fortunate in that she can select a flour.

In New Zealand there is only one flour available — this equates roughly to the American all-purpose flour. Any recipe calling for all-purpose flour or pastry flour can be followed exactly, providing the other ingredients are available. Recipes requiring bread flour can be used, but the liquid in the mixture must be decreased (flours with a higher gluten content can absorb more liquid). Cake flour, which is deliberately low in gluten to give a tender product, can be replaced by flour mixed with cornflour, a tablespoonful of flour in each cup should be replaced with cornflour, or 2oz to 3oz in each pound.

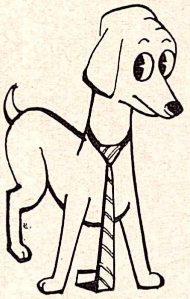
Self-raising flour can be made by sifting ½oz baking powder with each pound of flour. Enriched or fortified flours indicate that other substances have been added to increase the food value. Dried skim milk powder can be added to flour for this purpose, 1oz to 2oz to each pound of flour.

What is shortening?

The American term 'shortening' means fat of some kind. The fat most used in New Zealand for baking is butter. In America there is a wide selection of shortening available; these include, besides butter, lard, various oils, margarine and hydrogenated fats. It is the recipes stipulating the latter that are most frequently disappointing when made with butter. There is in New Zealand no equivalent for this type of shortening, which is made from oil by a chemical process known as hydrogenation. Frequently this shortening is also creamed and aerated before it is marketed and sold under various trade names; use of a shortening already creamed and aerated can materially alter the method of combining the ingredients for cakes and biscuits. Oil is also used as a shortening in a number of recipes—the edible oils available in New Zealand are not suitable for these recipes. If they are used the product will be edible but not comparable to a similar product made with butter. It is advisable to try out only those recipes requiring butter, lard, margarine or dripping and ignore those calling for oil and special named shortenings.

—With acknowledgment to the Home Science Extension, Department of Adult Education, University of Otago.

The Mixed-up Gifts



It was Christmas morning. What fun! The children all hurried downstairs to open up their Christmas presents. Even the dog and the cat seemed to share the general excitement.

Right in the middle of the unwrapping of presents there was a knock at the door. It was a big carton of gifts from Uncle Charlie.

Although Uncle Charlie did not have a good memory, he *always* remembered Christmas. He had wrapped up the gifts but, forgetting whom each one was for, had just put the names on the ones he thought. They *were* mixed up.

Dad was the first one to open his gift. It was a . . . . . ! and the note on it said "If you wear this around your neck, everyone in town will look at you." Father *was* pleased. He said "Let's see what Mother has."

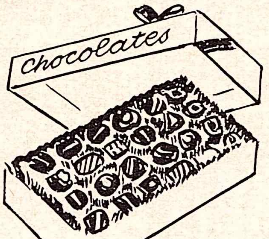
When Mother opened her gift, it was a . . . . . . ! and on her note Uncle Charlie had written "This is the nicest gift I could get you, and I'm sure you'll enjoy eating this."

When daughter Betty looked at her card she read "This

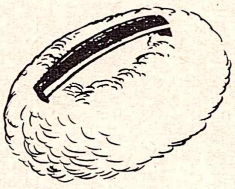
(continued on page 36)

Now, if you want to play this lovely Christmas game, cut out the pictures below (or draw some for yourself), turn them face downward and get Mother to read the story. You turn over the pictures as Mother reaches the blank spaces, and call out the name.

Man's Tie

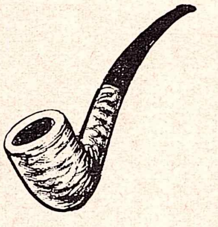


Box of Chocolates

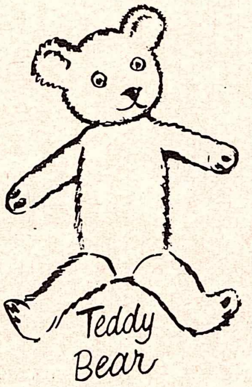


Powder Puff

Cricket bat



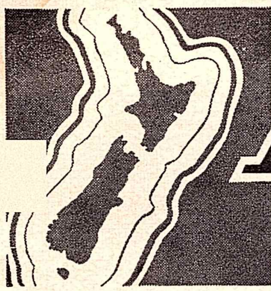
Man's Pipe



Teddy Bear

Dog's bone

Dead Mouse



District News

– WEST COAST –

Some good fishing catches have been reported from the West Coast. Mr F. Neighbours, of Waimangaroa, caught eight good sized snapper off Fairdown Beach, and Mr T. Douglas, of Granity, caught six at the Nine Mile Beach at Karamea.

Bill McGettigan, who transferred from Ohai to Granity, has been initiated into the art of fishing by Bill Farnworth, manager of Millerton mine. The first fish hooked was a large skate. It was played for half an hour and then snapped the line as it reached the last line of breakers. After this battle Bill reckons that he won't miss the fights he had with Southland trout in the past.

FAREWELL AND WELCOME

An afternoon tea was held in the Granity Hall to farewell Mr and Mrs Leo O'Connor, of Ngakawau, who are leaving the district for Wellington. At the same time the opportunity was taken to welcome Mr and Mrs W. H. McGettigan. Mr O'Connor has been appointed an administrative officer at Mines Department, Wellington, and Mr McGettigan succeeds him at the Mines Office in Ngakawau.

GOLDEN WEDDING

Two old and highly respected Buller residents, Mr and Mrs J. Slack, celebrated the golden anniversary of their wedding at Westport on August 23, and later that week they were entertained by members of their family at a social gathering. Mr Slack was in the mining industry at Stockton for 25 years before retiring at Westport in 1950. They are held in high esteem all along the West Coast.

A young lady with a future in writing is Miss Sandra Crackett, a fifth form student at Westport Technical College. Sandra had a project, "Relics of the Buller", and so good was her story that we hope to reproduce it in "Coal" in a future issue.

– WAIKATO –

People in Hamilton have been seeing quite a bit of the Waikato coalfields recently . . . in pictures. A woman journalist who is one of those unfortunate beings who find themselves on the public speaking round, and who often visits the coalfields, has a comprehensive set of coloured slides and has been using them for addresses.

The pictures always bring expressions of amazement from audiences who have no realisation of the immensity of some of the projects being carried out virtually on their back doorsteps.

Mr J. Glendenning, District Manager, with Mr Leo O'Connor, the former Administrative Officer at Ngakawau and Mr Bill McGettigan, his successor from Ohai.

PUKEMIRO

An underground mine near Huntly is making a steady contribution to coal output in the Waikato. This is at Pukemiro, which employs 141 men and has an output of 400 tons a day.

Most of the miners live at Pukemiro and Huntly whence they travel daily by train. The face at present is about half a mile from the surface.

Pukemiro Collieries Ltd., Auckland, formed 50 years ago, began production in 1916. The mine had a very promising year last year. Net profit increased by 81 per cent to £30,135. Capital was increased during the year by a one-for-two bonus issue, and a dividend of 9½ per cent, which included a 2½ per cent jubilee bonus, was paid.

• • •

RETIREMENTS

Retirements from the industry since the September issue of "Coal" (with years of service in parentheses) are:—D. Fenney, Huntly (25); T. M. Scurr, Waihi Beach (38); T. Williams, Huntly (31); J. Bell, Dobson (30); J. P. Walsh, Ngakawau (43); M. McCloskey, Dobson (25); E. M. Rutter, Greymouth (32); V. J. Healey, Huntly (30); A. R. G. Geddes, Stockton (40); W. R. McK. McCallum, Rotowaro (48); T. Duncan, Nightcaps (48); F. Wooton, Greymouth (40); D. J. Thomson, Ngakawau (34); A. McA. Crawford, Taylorville (32); C. Boyd, Motueka (33); R. McGavin, Granity (38); A. Clark, Dobson (29); R. A. Boustridge, Dobson.

• • •

OBITUARY

The industry records with regret the following deaths since the September issue (years of service in parenthesis): A. B. White, Dobson (31); R. M. Hellier, Coalgate (20); T. S. Perrin, Reefton (14).

A tribute to . . .

"JOCK" PENMAN

The tragically sudden death of Mr Jock Penman on September 11, 1960, in Greymouth, was a great blow to his many friends in the Department of Health. I realise that he was most widely known among all sections of the mining community but he was also well known to many of us in the Department of Health.

There is little I can add to the memory of Jock Penman as a man and this has been very clearly brought out by the many references I have heard since he died from all sections of the mining community.

In the Department of Health, those of us who knew him were, of course, associated with him in his various capacities either as an Inspector of Mines or Chief Inspector, or in the position he held at his death, and it is in connection with his very great personal interest in the health and welfare of miners that this short appreciation is written.

The mines inspectorate has a long and proud tradition both in the United Kingdom and in this country, and Jock Penman was an outstanding officer in this tradition. His interest was in all health aspects of the mining industry from first aid, including the development of the morphia-in-mines scheme, the standards of equipment at rescue stations and his concern and interest in the control of dust diseases, which resulted in his active assistance to this department in the recent survey of miners in the Grey Valley area.

These are only a few of the ways in which his interest in the health and welfare of miners can be illustrated. His death leaves a very great gap and he will be sorely missed not only by his mining colleagues but also by those of us who knew him from the Department of Health.

—Dr D. P. Kennedy,
Director, Division of Public Hygiene, Department of Health.

"Coal" adds to this tribute its sincere condolences to the family of Mr Penman.

•

Mr O. R. Hunter

We regret to record the sudden death, on October 12, of Mr O. R. Hunter, who established the Dominion Boiler Treatment Company, Auckland, and who is so well known throughout New Zealand where all types of boilers are operated.

Ron Hunter was born in Lyttelton 53 years ago and learned the engineering trade there.

He then went to sea as a marine engineer, obtained his first class marine certificate and sailed for some years as chief engineer in overseas shipping lines.

In 1942 he came ashore to be an Inspector of Machinery in the Marine Department at Auckland, but resigned to establish his own business, and it was here that his bright and cheery manner and willingness at all times to help others with their mechanical problems earned him so many friends.

He was also a very popular member of the Maungakiekie Golf Club.

This magazine pays tribute to an engineer who helped to establish efficiency in coal burning plants, not only in supplying a very satisfactory stoker, but also in treating boiler water.

•

Mr James Russell, born in Scotland, came to N.Z. in 1922. He settled in Millerton and lived there for 30 years. For the past eight years he had been living in retirement at Westport.

Mrs Layfield, widow of Thomas Layfield (late of Hector), whose death was reported in May of this year.

Mrs Jones, late of Granity.

Mrs C. Nuttal, a keen church worker, was born in Granity and lived there all her life.

Mr Charles Findlay, late of Denniston.

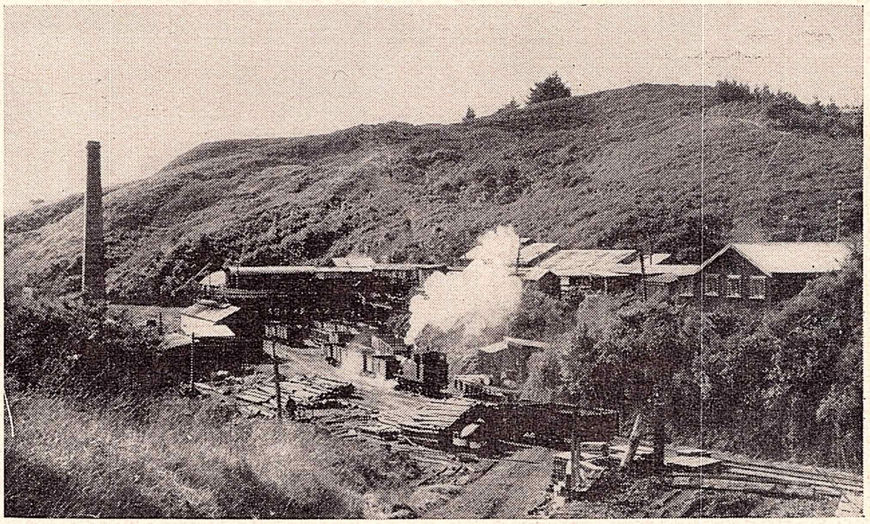
Mr William Lutton, born in Ireland in 1869. Came to N.Z. as a boy of 10 years. A great sportsman, Mr Lutton worked in various parts of this country, including Waihi and Shotover. Came to the West Coast in the early Nineties. His passing severs another link with the pioneering days.

Mrs Stewart, of Waimangaroa.

Mrs McMillan, born in Scotland but had lived in Millerton for the past 48 years. She was held in highest respect in the community.

Mr Ken Todd, died suddenly while on duty at Strongman mine. A keen sportsman, he took an interest in both football and hockey. He was born in Greymouth and served in the Merchant Navy during the war. He transferred to Greymouth two months before his death to take up a deputy's position at Strongman mine.

Nicholas Hambley, born Lanarkshire, Scotland, October 23, 1879; died Greymouth, July 10, 1960. "Old Nick" as the late Mr Hambley was affectionately known, started work in coal mines at 10 years, and emigrated to New Zealand in 1910, settling in Runanga. He worked in Liverpool mine and later as a partner in Braehead colliery (later known as Boote and Party). He retired in 1943. He was a foundation member of Runanga Municipal Band, which was the first band to bring national honours to the Coast. He had a lifelong interest in bands and band music. One son, Bill, is well known in the coal trade in Wellington, being on the staff of State Coal Depot. "Coal's" deepest sympathy goes to Mrs Hambley and her family.



The Pukemiro Collieries.

SNIPPETS from the Mines Statement

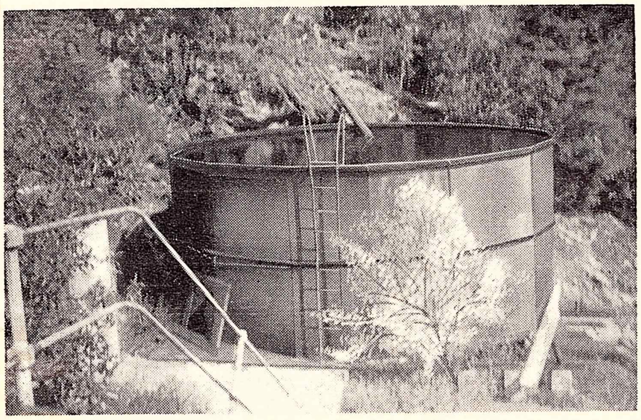
. . . Two briquetting plants are to be provided — one in Grey Valley and another on the Buller coalfield. A briquetting plant for the Ohai mines will be considered when certain specified problems have been overcome.

. . . The results of uranium prospecting have so far been disappointing.

. . . A programme planned for prospecting ironsands has been deferred pending completion of formation of an investigating company to include both Government and private interests.

. . . The emphasis must now be towards promotion of sales (of coal), consumer service and coal utilisation.

Reserve Water Supply Tank



Looking down on the tank.

In some districts in the summer, and sometimes in the winter, small streams are liable to dry up to almost a trickle. For mines that rely on these streams, it is necessary to have an alternative source of water supply.

As a reserve in case of fire, or as bathhouse supply, etc., a tank containing 18,000 to 20,000 gallons of water is an essential standby in an emergency. With 18,000 gallons of water available, one hose taking 200 gallons a minute will supply a stream of water for 1½ hours.

A tank of this capacity can be made from a supply of ¼-inch steel plates, some concrete blocks, old rails, a few pipe fittings and some angle iron. The services of a welder are required to complete the job.

Construction details

Here are particulars of the tank built at the Strongman Colliery:

The foundation consists of three rows of concrete fire-stopping blocks on their flat, each 24in. x 12in. x 9in., spaced about 24in. apart. These blocks serve to spread the load and keep the bottom of the tank clear of the ground. A single 30lb a yard rail is laid along each row of foundation blocks.

On the rails to form the bottom of the tank, ¼in. steel sheet plates are laid. The centre sheet is 20ft by 5ft with a 1ft strip welded on. Outside of this sheet, on both sides, a 12ft by 4ft sheet and an 8ft by 4ft sheet are welded. Outside this again on both sides, an 8ft by 4ft and two 4ft by 4ft sheets are welded. Smaller sheets can be used, but will require more welding. The projecting corners can be left or trimmed off with the welding torch as desired.

The wall of the tank consists of sixteen 8ft by 4ft by ¼in. plates welded at the bottom and edges. It is not necessary to roll these sheets. They can be welded without rolling and this will result in the construction of a many-sided tank. At mid-point and around the top is welded a 2in. by 2in. by ¼in. angle iron stiffener, cut in 4ft lengths and welded to the plates and butt welded to each other.

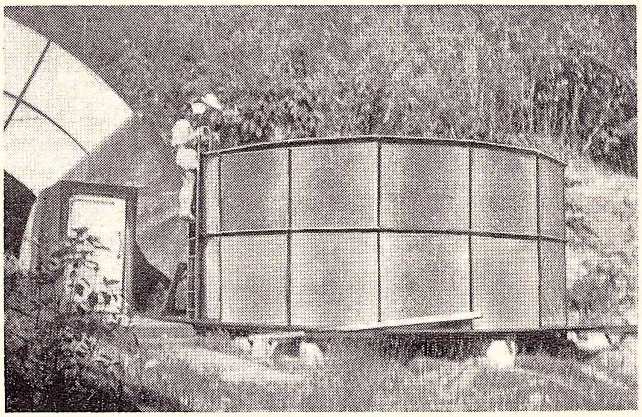
This gives a tank about 20 feet in diameter and 8 feet high.

It is advisable to fix a steel ladder INSIDE AND OUTSIDE to guard against anyone falling into the tank, and it is essential to erect a barrier to prevent small children from climbing the ladder and so falling into the tank.

The overflow pipe is a 4in. pipe, bell mouthed, with its top 1in. below the top of the tank, erected inside the tank. A sludge pipe 4in. in diameter is secured by a bend to the bottom of the tank. This is joined up to the overflow pipe, and there is a gate valve between them. When the tank requires cleaning out, the valve is opened. At other times the water from the overflow pipe passes through the sludge pipe to the nearest waterway. This obviates an unsightly overflow over the edge of the tank.

The main outflow to the reticulation system is a 6in. pipe fixed to the bottom of the tank.

The whole is a very serviceable tank that can be used for many purposes, as well as a standby supply of water for use in emergency.



Reserve water tank at Strongman Colliery. These floor plates have not been trimmed.

* * *

THE MIXED-UP GIFTS *(continued from page 33)*

is just what you need to powder your nose" and on opening her parcel she found a . . . . . . ! What fun!

Uncle Charlie knew son John liked playing cricket and his parcel could have been a cricket bat. His card said "Hope you score a century with this," but when he opened his parcel it was a . . . . . . ! "I'll do my best," said John.

Grandad was thrilled to open his parcel and find a . . . . . . ! His card read "Fill this up with tobacco and have a good smoke."

Baby was lucky. Mother read her card which said "Take this to bed with you and cuddle it at night." And do you know what baby's present was? It was a . . . . . . !

Uncle Charlie even remembered the dog and cat. The dog got a big juicy . . . . . . ! and the cat a lovely . . . . . . ! that Uncle Charlie thought a dog and cat would find very tasty.

Uncle Charlie *was* kind, wasn't he? But what a pity he was so forgetful. Still, he has given you a lovely game to play and you'll have lots of fun playing it.

Nobel reports on :

'EXPLOSIVES IN COAL MINING'

FIRING ACROSS THE BREAK

Although the most important section of the Home Office "Gallery" test is designed to simulate a blown-out shot, it now seems clear that the most dangerous condition in actual practice is not the blown-out shot but one fired across a break.

While Permitted explosives are designed so as to be less likely to produce an ignition, it must not be assumed that under any and all conditions they are incapable of igniting inflammable mixtures of gas or dust. If the shot-hole contains the correct weight of charge, is adequately stemmed and otherwise properly loaded and fired, there is little or no chance of the shot igniting any inflammable gas, but if any cracks or openings intersect the shot-hole, the charge, even if consisting of a Permitted explosive shooting directly into such an opening may well ignite any gas which may be present in it. Thus the extreme importance of thoroughly examining every shot-hole before charging it cannot be over-emphasised. If such a shot-hole is found to be intersected by a crack or crevice it should not be charged.

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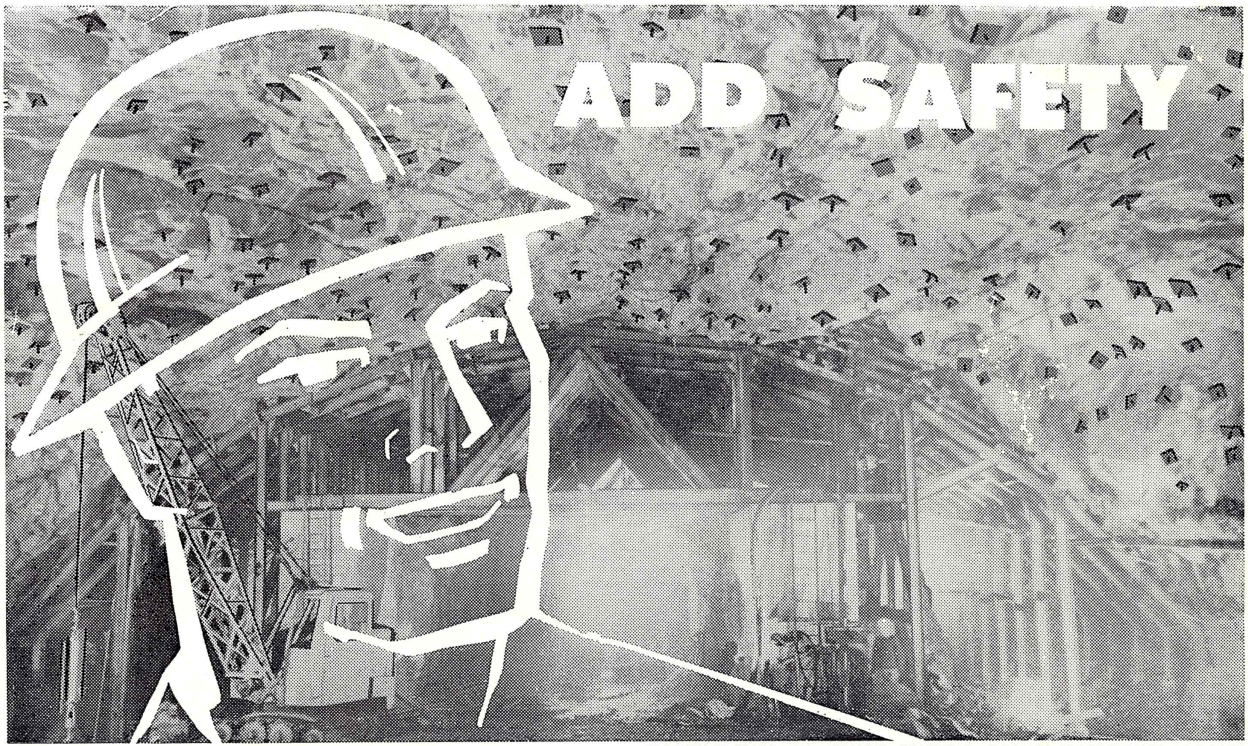


MACHINE HALL, T.I. POWER STATION, SNOWY MOUNTAINS PROJECT

in underground excavations, mines, tunnels with

TITAN ROCK BOLTS

Originally developed to pin mine roof and back to a competent strata, rock bolting is now successfully applied in a designed pattern which develops jointed rock into a structural entity. Today Titan plays a vital part in large underground excavations, giving better service at lower cost.

Titan rock bolts are used extensively throughout Australia in private industry and National Works like the Snowy Mountains project and the Kiewa scheme in Victoria.

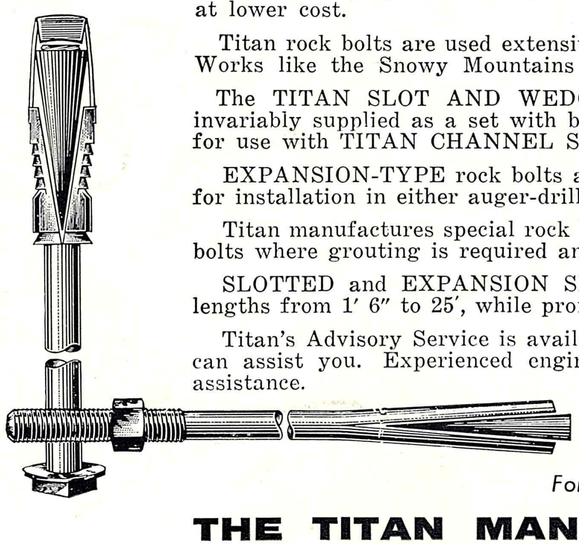
The TITAN SLOT AND WEDGE-type bolt is made from specially selected steel. It is invariably supplied as a set with bolt, wedge and plate washer. A special washer is available for use with TITAN CHANNEL SETS.

EXPANSION-TYPE rock bolts are made from specially selected high tensile steel suitable for installation in either auger-drilled or stoper-driven holes. The hole length need not be exact.

Titan manufactures special rock bolts for specific applications. These include hollow and tube bolts where grouting is required and 1⅛″ diameter slotted bolts.

SLOTTED and EXPANSION SHELL-type Titan Rock Bolts are available from stock in lengths from 1′ 6″ to 25′, while prompt delivery can be given to orders for special bolts.

Titan's Advisory Service is available on request. Whatever your rock bolting problem, Titan can assist you. Experienced engineers are ready to travel to the job and give on-the-spot assistance.



For further information, write:

THE TITAN MANUFACTURING CO. PTY. LTD.

Box 292, P.O., Newcastle, N.S.W. Works, Ingall Street, Mayfield Phones: MW 1173, MW 3350

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